SLV-825/B/NC/NP/UB/VC
RMT-V127

SERVICE MANUAL

AEP Model
SLV-825
French Model
SLV-825B
E Model
North European Model
SLV-825NC
Spanish Model
SLV-825NP
UK Model
SLV-825UB
Germany Model
Swiss Model
SLV-825VC

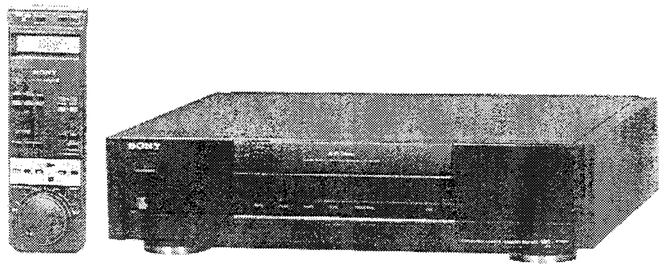

Photo:SLV-825

- **Refer to the SERVICE MANUAL of VHS MECHANICAL ADJUSTMENT II for MECHANICAL ADJUSTMENTS. (9-972-816-11)**

VHS PAL Hi-Fi

V11631

SPECIFICATIONS

Channel coverage	VHF channels E2-E12 (A to H only for Italy) CATV channels S01-S03 CATV channels S1-S20 HYPER S21-S41 UHF channels E21-E69 SLV-825/825VC/825NC/825NP UHF channels B21-B68 SLV-825UB System B/G VHF channels E2-E12 CATV S3-S20 UHF channels E21-E69 System L VHF channels F2-F10 CATV S01-S23 HYPER S24-S44 UHF F21-F69 SLV-825B
Usable video cassettes	VHS video format cassettes NTSC cassette recorded in SP mode can be played back on a PAL system television set

Inputs and Outputs

Video inputs	LINE IN 2: phono jack EURO-AV (LINE 1): 21-pin (pin 20) SLV-825/825UB/825NC/825NP EURO-AV (LINE3): 21-pin (pin 20) SLV-825 VC EURO-AV (LINE 3) PAY-TV DECODER : CANAL PLUS 21-pin (pin 20) SLV-825B
Audio inputs	LINE IN 2: phono jack EURO-AV (LINE 1): 21-pin (pins 2 and 6) SLV-825/825UB/825NC/825NP EURO-AV (LINE 3): 21-pin (pins 2 and 6) SLV-825VC EURO-AV (LINE 3) PAY-TV DECODER : CANAL PLUS 21-pin (pins 2 and 6) SLV-825B
Video output	LINE OUT : phono jack EURO-AV (LINE 1): 21-pin (pin 19)
Audio output	LINE OUT: phono jack EURO-AV (LINE 1): 21-pin (pins 1 and 3)
CONTROL L	Stereo mini-minijack (1)
CONTROL S IN/OUT	Minijack (2)
Microphone input	Minijack
Headphone output	Stereo minijack

General

Power requirements	240 V AC, 50 Hz (SLV-825UB) 220-230V AC, 50 Hz (SLV-825/825VC/825NC/825NP/825B)
Power consumption	33 W
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	-20°C to 60°C (-4°F to 140°F)
Dimensions	Approx. 466 X 115X 395 mm (w/h/d) (18 3/8 X 4 5/8 X 15 5/8 inches) including projecting parts and controls.
Weight	SLV-825/825VC 7.9 kg (17 lb 7oz) SLV-825UB/825NC/825NP/825B 8.1 kg (17 lb 14 oz)

Accessories Supplied
See page 5.

Design and specifications are subject to change without notice.

Note.
This appliance conforms with EEC directive 87/308/EEC regarding interference suppression.

Remote commander RMT-V127 is supplied as a unit for service. Don't supply individual parts except for the timer cover and the battery cover.

VHS PAL VIDEO CASSETTE RECORDER

SONY®

MICROFILM

MC-Service

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:
Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microampers). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

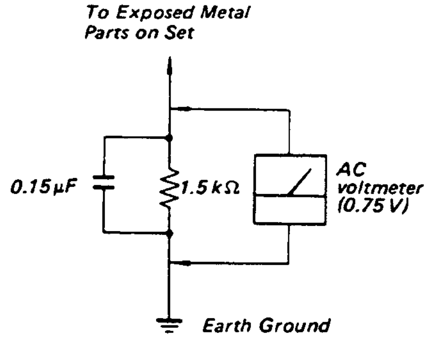

Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

SONY
SLV835

MC-Service

Service Manual

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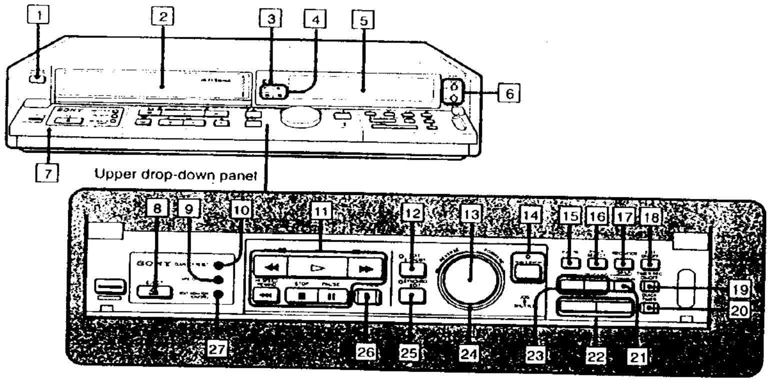
Identifying the Parts and Controls



Front Panel

See the indicated pages.

1 ON/STANDBY switch and indicator 7,14
The indicator lights up in green when the VCR is turned on, and in red when the VCR is in standby mode.

2 Cassette compartment 15

3 Remote Sensor

4 Indicators
AUTO TRACKING 19
EDIT MONITOR 59
AUDIO INSERT 62
VIDEO INSERT 62

5 VCR Display panel 67

6 REC LEVEL controls 48

7 Upper drop-down panel

8 ≜ EJECT button 15

9 VPS (ON/OFF) button 28
(This button is provided on the SLV-825VC models only)

10 COUNTER RESET button 17,61

11 Tape transport buttons
◀◀ REW (rewind) button
▶ PLAY button
▶▶ FF (fast forward) button
◀◀◀HI-SPEED REWIND
■ STOP button
II PAUSE button

12 EDIT STANDBY button and indicator 59

13 JOG dial 9, 13, 20, 21, 29, 33, 34, 51, 60, 61

14 LANC REMOTE button and indicator 60

15 TV/VTR button 7, 14

16 INPUT SELECT button 7, 14, 24, 34, 54, 59

17 REC MODE (SP/LP) button 4, 24, 48, 54, 59

18 EDIT ON/OFF button 55, 61

19 TIMER REC ON/OFF button 23, 24, 25, 27

20 QUICK TIMER button 24

21 TRACKING AUTO/MANUAL button 19, 33

22 PROGRAM +/– buttons 10, 13, 21, 29, 30, 34, 51

23 TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲ buttons 19, 33

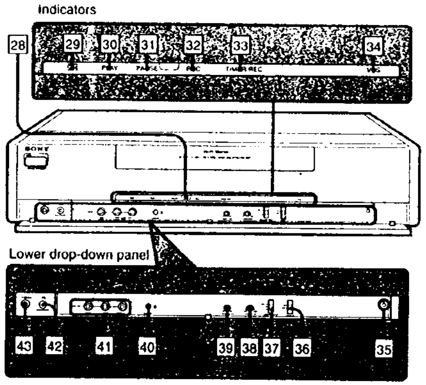
24 SHUTTLE ring 33, 60, 61

25 SYNCHRO EDIT button and indicator 60

26 ● REC (record) button 20, 21, 51

27 EDIT MONITOR (ON/OFF) button 61, 62

Front Panel



28 Remote Sensor

29 ⊙⊙ (cassette) lamp

30 PLAY lamp

31 PAUSE lamp

32 REC lamp

33 TIMER REC lamp

34 VPS lamp
(This indicator is provided on the SLV-825VC models only)

35 CL (clear) button 69

36 NTSC PB ON PAL TV (ON/OFF) switch 16, 17

37 COMMAND MODE VTR1/2/3 selector 8

38 SHARPNESS SOFT/SHARP control 16

39 PHONE LEVEL MIN/MAX control

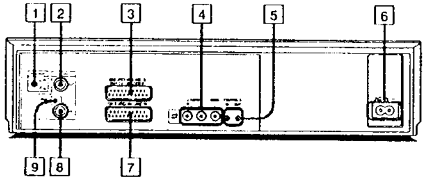
40 CONTROL L ⓛ jack 56

41 LINE IN 2 VIDEO/AUDIO jacks 48, 49, 53, 56

42 MIC (microphone) jack 62

43 PHONES (headphones)jack

Rear panel



1 RF CHANNEL screw (30-39) 14

2 AERIAL OUT socket 6, 28

3 ⊸ EURO-AV (LINE 3) (21-pin) socket (SLV-825/825UB/825NC) 53, 57
⊸ EURO-AV (LINE 3) PAY-TV DECODER (21-pin) socket (SLV-825VC models only) 28, 53, 57

4 LINE OUT AUDIO/VIDEO jacks 6, 55

5 CONTROL S IN/OUT jacks 57

6 AC IN inlet

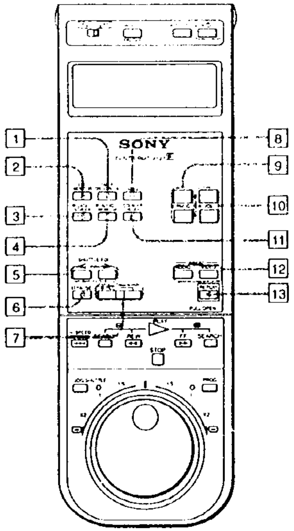
7 ⊸ EURO-AV (LINE 1) (21-pin) socket 6, 28, 53

8 AERIAL IN socket 6

9 LOCAL/DX switch 14

This section is extracted from instruction manual of SLV-825/825UB/825VC/825NC.

Remote Control (with flap closed)



The buttons on the Remote Control with the same name or mark as those on the unit have the same function. The buttons with an orange dot can be used to remotely control Sony TVs having the ▣ mark when the TV/VTR selector is set to TV. The TV/VTR button and/or the -/-- (10's digit) button cannot operate certain Sony TVs.

1 TIMER ON SCREEN button 25

2 EDIT MONITOR button 61, 62

3 DATA SCREEN button 17, 19, 43, 44

4 AUDIO MONITOR button 18, 45, 47

5 SHUTTLE EDIT buttons 51, 61

6 ❚❚ PAUSE button 16, 21, 32, 50, 51

7 ● REC (recording) buttons 20, 21, 51

8 INDEX button 43, 44

9 PROG (programme) +/– buttons 10, 13, 21, 29, 30, 34, 51

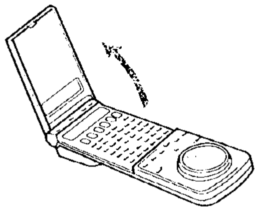
10 VOL (TV volume) +/– buttons
Press to control the volume of the TV.
Effective only for Sony TVs with the ▣ mark.

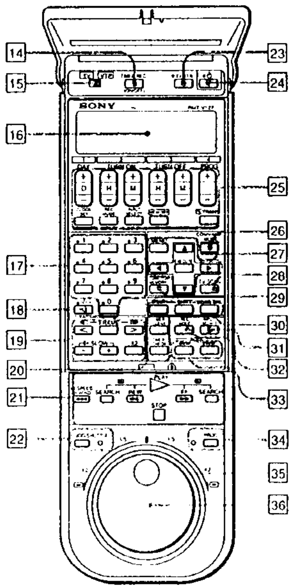
11 COUNTER RESET button 17, 61

12 AUDIO/VIDEO INSERT buttons 62

13 REPLAY button 32

Remote Control (with flap opened)





14 TIMER REC (ON/OFF) button 23, 24, 25, 27

15 TV/VTR remote control selector 8, 20

16 Remote display 67

17 Programme position number buttons 13

18 -/-- (10's digit) button 13

19 Various speed playback buttons 32, 33

20 TIMER CHECK/TIMER CLEAR buttons 26

21 Tape transport buttons 16, 20, 30, 32, 39, 43, 44, 51, 62
- ⊖/⊕ SEARCH (reverse/forward)
- ◀◀ REW (rewind)
- ▶ PLAY
- ▶▶ FF (fast forward)
- ■ STOP
- ◀◀◀ HI-SPEED REWIND

22 JOG/SHUTTLE function button and indicator 33, 51, 61

23 TV/VTR button 12, 20, 29, 30, 31, 35

24 ⏻ (on/standby)button 16, 27

25 Timer recording/clock set buttons 11, 22, 23, 26, 27

26 COMMAND MODE button 8

27 Menu operation buttons 9, 10, 12, 13, 18, 29, 31, 37-40, 46, 49, 58

28 TV SCAN button 34

29 FUNCTION MEMORY button 38

30 P in P (picture in picture) buttons 34, 35
P in P, SHIFT, DIGITAL OFF

31 INPUT SELECT button 23, 29, 35, 49, 51

32 REC MODE select button 20, 21

33 INDEX MARK and ERASE buttons 42, 44

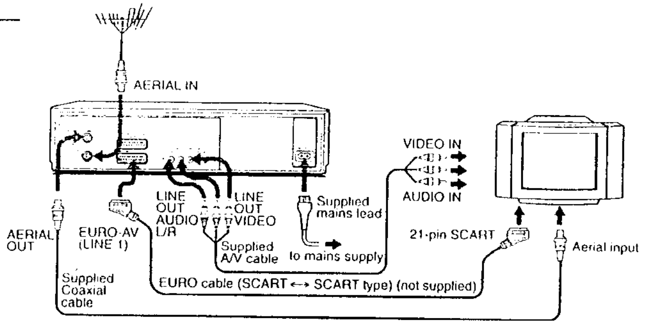
34 PROG (programme) function button and indicator 9, 13, 20, 21, 29, 34, 35, 51, 54, 61

35 SHUTTLE ring 13, 29

36 JOG dial 9, 13

> **Note on the TV/VTR remote control selector**
> When you set the TV/VTR remote control selector on the Remote control to TV, the TV/VTR button cannot operate some Sony TV's.

Step 2 Connecting the VCR


AERIAL IN
VIDEO IN
AUDIO IN
LINE OUT AUDIO L/R
LINE OUT VIDEO
Supplied mains lead
AERIAL OUT
EURO-AV (LINE 1)
Supplied A/V cable
to mains supply
21-pin SCART
Aerial input
Supplied Coaxial cable
EURO cable (SCART ↔ SCART type) (not supplied)

1 Turn the VCR round so you can see the rear panel.

2 Disconnect the aerial input lead from your TV and connect it to the socket marked "AERIAL IN" on the rear of the VCR.

3 Connect the coaxial cable (supplied with the VCR) to the socket marked "AERIAL OUT" on the VCR and then plug it into the aerial input socket on your TV.

4 Check all connections and ensure they are firm.

5 Take the mains lead and plug it into the socket on the back of the VCR marked "AC IN". Then plug the other end into the mains supply.

Additional Connections

The hookup using the supplied coaxial cable shows the basic hookup to watch and record TV programmes. If your TV has a SCART connector, or the phono type audio/video input jacks, make additional connections. Additional connections can improve playback picture quality.

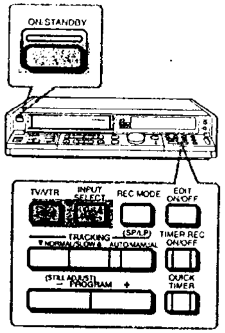
If your TV has a SCART connector: connect the EURO-AV connector of this VCR and 21-pin SCART connector on your TV, using the VMC-2121CE cable (SCART connector, not supplied).

If your TV has the phono type audio/video input jacks: connect the LINE OUT AUDIO/VIDEO jacks of this VCR and the AUDIO/VIDEO IN jacks of your TV, using the AV cable (supplied).

If you have made the VCR-TV connection using the LINE OUT AUDIO/VIDEO jacks, you can't use the on-screen information display.

Important
If you have made the VCR-TV connection using the EURO-AV connector, open the main MENU, move the arrow to "RF MODULATOR" and select "OFF". See "Customizing Your VCR" on page 40 for details.

Step 3 Tuning the VCR to Your TV


ON/STANDBY
TV/VTR
INPUT SELECT
REC MODE
EDIT ON/OFF
TRACKING
(SP/LP)
TIMER REC ON/OFF
▼NORMAL/SLOW▲
AUTO/MANUAL
(STILL ADJUST)
− PROGRAM +
QUICK TIMER

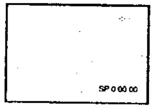
1 Having completed **Step 2**, press ON/STANDBY on the front of the VCR so that the green light above the button lights up. If you have made additional connections, skip **step 3**.

2 Press TV/VTR several times until "VTR" appears in the VCR display panel on the inside surface of the upper drop-down panel.

3 Press INPUT SELECT (on the inside surface of the upper drop-down panel of the VCR). Each time you press this, part of the display on the VCR will change. Keep pressing until "LINE L2" shows.

4 Turn on your TV and select a programme position that is not used to receive a TV station (in the UK, 0 or 9 perhaps).

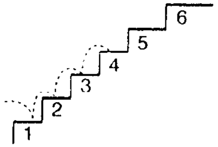
5 Tune the TV so that a blue screen with tape counter (0:00:00) is clearly displayed on the TV screen. (If you have difficulty, please refer to the instructions for tuning your TV.)

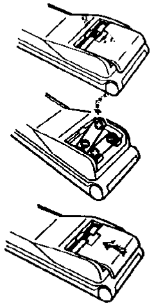


6 Press INPUT SELECT again, and keep pressing it until "TUNER" shows in the VCR display panel.

You have now tuned your TV to the VCR. Whenever you wish to receive the VCR's playback picture on the TV, turn to the TV programme position you have set for the VCR, switch on the VCR and press TV/VTR.

Step 4 Preparing the Remote Control



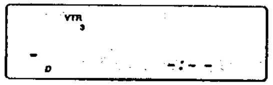


1 Take the remote control and turn it over so that the remote display cannot be seen.

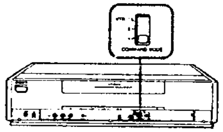
2 Slide and remove the cover.

3 Insert two R6 batteries.

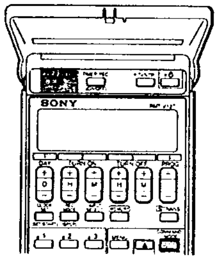
4 Close the cover. Now you have "-D VTR 3 -:- -" in the remote display. If you don't, check the battery polarities and position the batteries correctly. Also check that "VTR 3" is shown in the remote display. If not, lift the flap of the remote control and press COMMAND MODE several times until the command mode display "VTR 3" is shown in the remote display.



5 Check that the COMMAND MODE 1/2/3 selector (inside the lower drop-down panel of the VCR) is positioned at "VTR 3." If not, slide the selector so that it is positioned at "VTR 3."



6 Set the TV/VTR remote control selector to "VTR."



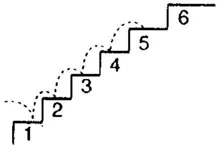
Notes on batteries

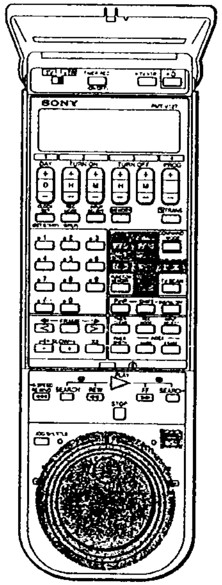
- Under normal operation, batteries last for about three months. If the remote control however, is not to be used for a long period, remove the batteries from the compartment to avoid possible damage from battery leakage.
- Do not use a new battery together with an old one.
- Do not use different types of batteries.

Note

When you insert the batteries into the remote control, the indication "VTR3" appears in the remote display. That tells you that the command mode setting of the remote control is set to "VTR3."

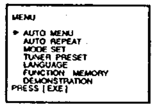
Step 5 Tuning the VCR to the Required Stations





Now that you have the blue screen on your TV, you can tune the individual channels on your VCR to receive the required stations.

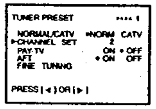
1 Lift the flap on the remote control, point the remote control at the VCR and press MENU. The following menu comes up.



```
MENU

▶ AUTO MENU
  AUTO REPEAT
  MODE SET
  TUNER PRESET
  LANGUAGE
  FUNCTION  MEMORY
  DEMONSTRATION
PRESS [EXE]
```

If you want to use the different language that is now displayed on the screen, see page 12.

2 Using ▲ or ▼ of the cursor keys on the remote control, move the cursor (▶) on the TV screen down to "TUNER PRESET", and then press EXE on the remote control. The menu shown at the right will appear on the TV screen:*

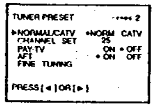


```
TUNER PRESET              PAGE 1

 NORMAL/CATV      •NORM  CATV
▶CHANNEL SET         2
 PAY-TV             ON  •OFF
 AFT               •ON   OFF
 FINE  TUNING

PRESS [◀] OR [▶]
```

The screen display differs depending on the model.

- To SLV-825UB users: "NORMAL/CATV" does not appear on the TV screen of your model. Therefore, skip steps 3 and 4 below.
- "PAY-TV" appears on SLV-825VC models only.

3 **All except SLV-825UB models:** using ▲ or ▼ of the cursor keys on the remote control, move the cursor (▶) on the TV screen up to "NORMAL/CATV." Then, move the dot to NORM using the left cursor key.



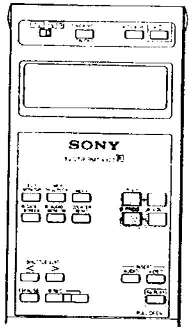
```
TUNER PRESET              PAGE 2

▶NORMAL/CATV      •NORM  CATV
 CHANNEL SET        25
 PAY-TV             ON  •OFF
 AFT               •ON   OFF
 FINE  TUNING

PRESS [◀] OR [▶]
```

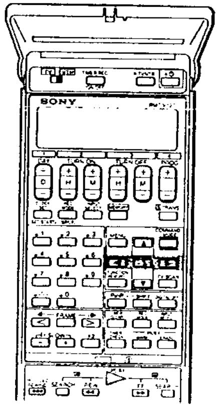
4 **All except SLV-825UB models:** using ▲ or ▼ of the cursor keys on the remote control, move the cursor (▶) on the TV screen down to "CHANNEL SET."

5 Close the flap and press PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR to select the programme position.**
The programme number will change in the VCR display panel and on the TV screen.

****Another way to select the programme position is:***
Press the PROG function button on the remote control to light the indicator beside the button and turn the jog dial clockwise for higher numbered programme position or counterclockwise for lower numbered programme positions.

(Continued)





6 Once you have selected the programme position, open the flap and tune to the channel required using ◀ and ▶ of the cursor keys on the remote control.
The channel number automatically increases with ▶ and decreases with ◀. (In Italy, channel numbers 13 to 20 correspond to channels A to H.)
The number stops changing when the first broadcast programme received is displayed: the programme will be displayed briefly before the screen turns blue again.

7 If this is the broadcast programme required*, press EXE to store it. If it is not, keep searching, i.e. go back to step 6.

8 Now that you have stored a channel against your chosen programme number, go back to step 1 and repeat storing all the channels required against the different programme numbers.

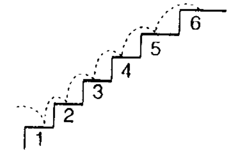
*A faster way to store broadcast channels (say, if your area has a lot of broadcast channels) is to do the following alternative steps 7 and 8:

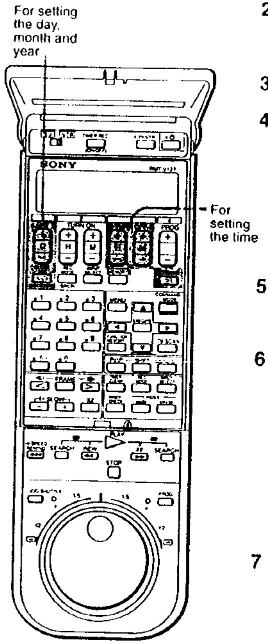
7 If this is the broadcast programme required, press PROG+ once (on the remote control) to automatically store it. To store the next broadcast channel, return to step 5.

8 Having stored all the broadcast channels against your chosen programme numbers, press EXE.

If the received picture is unclear
Press ◀ or ▶ of the cursor keys on the remote control until you get a clearer picture.

Step 6 Setting the Clock





When -:-- lights up in the VCR display panel
Any time power is interrupted for more than one hour, you will see -:-- lighted when power is restored. You will have to re-set the date and clock again.

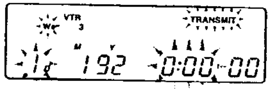
When a short beep sounds repeatedly
The VCR is in timer recording or quick timer recording or standby mode for timer recording, and the setting cannot be transmitted.

To correct the preset date and time
Open the remote control flap, repeat steps 2 to 7.

The last thing you need to do in Getting Started is set the clock on the remote control.

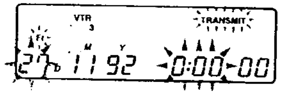
1 To do this, lift the remote control flap.

2 The items in the remote display flash to tell you that the remote control is ready to receive your clock setting data.



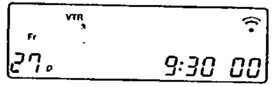
3 Press CLOCK SET.

4 Press the button marked "D" (top to go forward and bottom to go backwards) until today's day, date, month and year are indicated. Keep pressing the "D" button going through the dates, months and years until the correct data is set.
If you keep the "D" button pressed, the display will change more rapidly.



5 Press the H and M rocker buttons under the flashing "0:00" on the remote display. Use these buttons to set the correct time. Once done the correct date, month, year and time are all shown on the remote display.

6 When you are satisfied that all the information is correct, point the remote at the VCR and press TRANS at the exact time corresponding with a time signal from the accurate clock, radio, telephone and so on.
The clock will start at 00 second.
The correct time should appear in the display on the front of the VCR when the VCR is off.

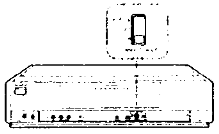


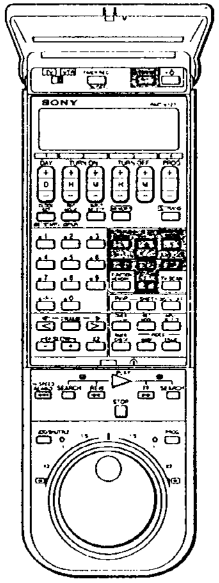
7 Close the remote control flap.

The following section "Additional Presetting Functions" describes various functions concerning setting up your VCR. Read through the section briefly to get to know the functions.

Now that you have finished all the things you should do in "Getting Started", you should proceed to "Basic Operations" to enjoy real home video life.

Additional Presetting Functions





Controlling Other Sony VCRs with This Remote Control

If the equipment has a command selector

Set the command mode selector to other position than "VTR 3", and press COMMAND MODE several times until the same command mode display as you have selected for the equipment is shown in the remote display.

If the equipment doesn't have a command selector

The command mode of this remote control should correspond to the settings listed below.

- If other equipment is a Sony Betamax infrared remote control VCR, select VTR 1.
- If other equipment is a Sony 8 mm format VCR, select VTR 2.
- If other equipment is a VHS format VCR, select a command mode position other than "VTR 3," which is selected for this VCR.

Selecting the Language on the MENU

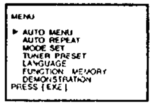
Most of the operations are done using the on-screen display (MENU). You can also select the language you want to display on the TV screen. Once you have selected the language, you can use the on-screen display in your language.

1 Turn on the TV and VCR.

2 Press TV/VTR on the remote control several times until "VTR" appears in the VCR display panel. (If you have made only an aerial connection, turn to the video channel you set the VCR to in **Step 3**.)

3 Lift the remote control flap.

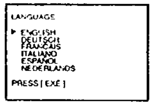
4 Press MENU.
The main MENU appears on the TV screen.



```
MENU

▶ AUTO MENU
  AUTO REPEAT
  MODE SET
  TUNER PRESET
  LANGUAGE
  FUNCTION  MEMORY
  DEMONSTRATION
PRESS [ EXE ]
```

5 Move the cursor (▶) to "LANGUAGE".

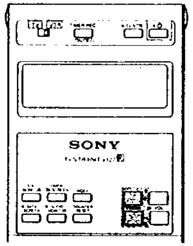
6 Press EXE.
The LANGUAGE menu appears.

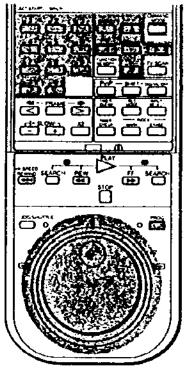


```
LANGUAGE

▶ ENGLISH
  DEUTSCH
  FRANCAIS
  ITALIANO
  ESPAÑOL
  NEDERLANDS

PRESS [ EXE ]
```

7 Select the language which you want to use for the on-screen display, using ▲ or ▼ of the cursor keys on the remote control.

8 Press EXE when you have finished selecting your option.





On FINE TUNING indicator
This indicator shows the operable fine-tuning range and stops at the optimal point of reception. When the VCR's tuner is receiving an optimal broadcast signal, the indicator stops at the centre position or one space right or left of the centre position. However, even when a broadcast is received in an optimal condition, the indicator may not be at the position described.

Allocating the Channels Directly

Enter the desired programme numbers using the programme position number buttons. To enter one's digits, press the desired number. To enter two digits numbers, press the -/-- (10's digit) button, then press the ten's digit number and the one's digit number.

Disabling Unwanted Channels

If you want to let only desired programme positions appear when you select the programme position for normal recording, quick timer recording or timer-activated recording, you can do this by following the procedure below.

1 Press MENU, move the cursor (▶) down to "TUNER PRESET" and press EXE.

2 Press PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR until the programme position you want to disable appears in the PROG field of the TUNER PRESET menu.
You can also use the jog dial to select the programme position.
To use this, press PROG function button to light the indicator beside the button.

3 Press programme position number button 0 twice or keep pressing the left and right cursor keys until "0" is displayed in the CHANNEL SET field.

4 Repeat steps 2 and 3 to disable other programme positions.

5 Press EXE.

If You Can't Get a Clearer Picture

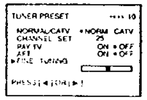
–Fine -Tuning

Normally, the Auto Fine Tuning (AFT) setting on the TUNER PRESET menu is set to ON, and the AFT function fine-tunes the picture. If the picture of a programme is not acceptable, fine-tune it manually.

1 Select the programme position in which the picture is distorted using PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR.
You can also select the programme position by pressing the PROG function button on the remote control to light the indicator beside the button and turn the jog dial clockwise or counterclockwise.

2 Press MENU, move the the cursor (▶) down to "TUNER PRESET" and press EXE.

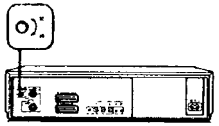
3 Press ▲ or ▼ of the cursor keys to move the cursor (▶) down to FINE TUNING.
The FINE TUNING indicator is displayed in the TUNER PRESET menu.

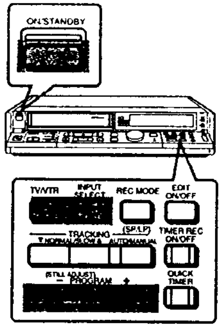


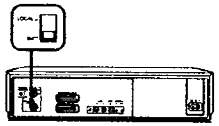
```
TUNER PRESET                 10

  NORMAL/CATV       • NORM  CATV
  CHANNEL  SET         25
  PAY TV               ON  • OFF
  AFT                  ON  • OFF
▶ FINE  TUNING

PRESS [ ◀ ] OR [ ▶ ]
```

4 Press ▲ or ▼ of the cursor keys to get a clearer picture.
The AFT function switches off automatically.

5 If you can't get a better picture, press ▲ to move the cursor (▶) up to "AFT," select "ON" and press EXE.
The TV screen returns to the original screen.







If You Have Failed in Tuning the VCR to Your TV

1 Find a UHF channel between 30 and 39 where there is no picture and you can hear a steady rustling sound or no sound at all.

2 Press INPUT SELECT several times until "LINE L2" appears in the VCR display panel.

3 Press TV/VTR several times until "VTR" appears in the VCR display panel.

4 With the supplied plastic adjuster, turn the RF CHANNEL screw (at the rear of the VCR) to a channel where your TV clearly displays a blue screen with the tape counter.

5 Press INPUT SELECT several times until "TUNER" appears in the VCR display panel.

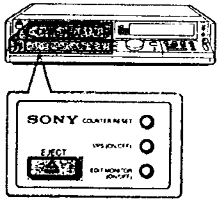
6 Press PROGRAM +/– to see if the TV screen changes to a different channel.

If the TV Signal is too Strong

You can strengthen or attenuate the reception signals using the LOCAL /DX switch at the rear of the VCR.
Normally set this switch to the DX position. If the reception signals are very strong, set it to the LOCAL position.

Chapter 3: Basic Operations

Playback



This section shows you how to play back a video cassette.

Inserting a Video Cassette

1 Open the upper-drop down panel.

2 Insert a video cassette.

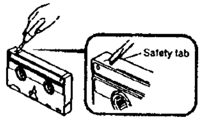
3 Gently press the centre of the front side of a cassette with the arrow indication facing upwards until the mechanism draws it into the compartment.
When the cassette has been loaded, the cassette indicator ▭ lights in the VCR display panel and the VCR turns on automatically.
If you insert a cassette with its safety tab removed, playback starts automatically.

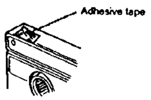
Ejecting the Cassette

Press ≜ EJECT on the VCR.

You can eject the cassette even if the power is off.
When you press ≜ EJECT, the power is turned on. After ejecting the cassette, the power automatically shuts off.

Note
You cannot eject a cassette during recording or recording pause mode.

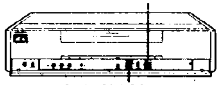


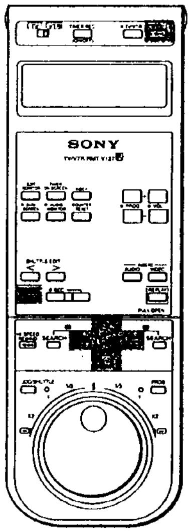


Protecting your cassette against accidental erasure

The cassette is provided with a safety tab to protect against accidentally erasing a previous recording. Break off the safety tab with a screw driver or a similar tool as shown on the illustration at left. If the safety tab is removed, the VCR ejects the cassette when you try to record on the cassette.

To record on a cassette with the safety tab broken off, simply cover the tab hole with adhesive tape.





Never unplug the power cord while the tape is in motion
This may cause the tape to be jammed in the VCR. When you need to unplug the mains lead, be sure to remove the cassette or turn off the power of the VCR.

Playing Back a Cassette

The VCR automatically detects the tape speed (SP or LP) with which a cassette was recorded. If you insert a cassette with its safety tab removed, playback starts automatically.

1 Insert a cassette.
The VCR turns on automatically.

2 Press TV/VTR several times to light up the VTR indication in the display window of the VCR.

3 Turn on the TV.
If you have made only an aerial connection, turn to the programme position you set the VCR to in "**Step 3** Tuning the VCR to your TV" on page 7.

4 Set the NTSC PB ON PAL TV ON/OFF switch to "ON" if you play back an NTSC-recorded tape.

5 Press ▶ PLAY.
When the tape reaches the end, it automatically rewinds.

To stop playback
Press ■ STOP.

To stop play back for a moment
Press II PAUSE.
Press II PAUSE again or press ▶ PLAY to resume playback.

To advance the tape rapidly
Press ■ STOP, then ▶▶ FF.

To rewind the tape.
Press ■ STOP, then ◀◀ REW.

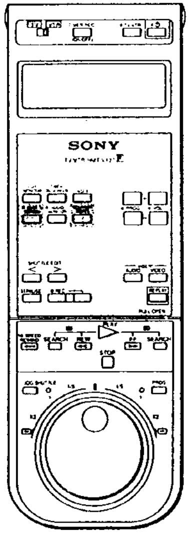
To rewind the tape at a higher speed
Press ◀◀◀ HI-SPEED REWIND.

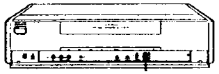
To start playback automatically after rewinding a cassette (AUTO PLAY)
This feature works only from the VCR.
Press ▶ PLAY while holding ◀◀.
The "▶" indication flashes while the tape is being rewound.

To view the picture during fast forward mode or rewind mode
Keep pressing ▶▶ during fast forward, and keep pressing ◀◀ during rewind.
Release the button to return to fast forward or rewind.

To turn the VCR on or off
Press ON/STANDBY on the VCR or I on the remote control.

Adjusting the sharpness of the picture
Turn the SHARPNESS control inside the lower down-panel of the VCR.
Turn to SHARP to get a sharper picture, and to SOFT to get a softer picture.





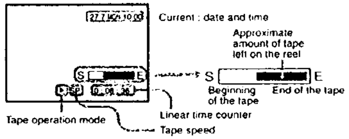
When the data screen does not appear on the TV screen
Check to see that the LINE OUT jacks are connected to the line input jacks of the TV. If this is the case, the data screen doesn't appear.

Notes on counter reading
- The counter does not work on the portions on which no recording has been made.
- After a cassette is ejected, the counter reading is retained. When a cassette is inserted in the VCR, the counter reading automatically returns to "0H00M00S."

Using the Data Screen

The data screen may appear on your TV screen when you first turn on the VCR. If the data screen does not appear, press DATA SCREEN on the remote control. The data screen does not appear when the NTSC PB ON PAL TV switch is set to ON.

The Data Screen with Tape Counter Display



To turn off the data screen
Press DATA SCREEN.

Indexing Tape Contents

You can use the tape counter as a reference to locate a desired scene by rewinding the tape.
Press COUNTER RESET on the remote control or on the VCR to set the counter to "0H00M00S" (counter zero position) before you play back or record.
To view a desired scene after playback or recording, rewind the tape to the counter zero position.

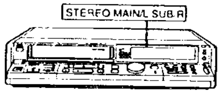
NTSC-recorded Tapes

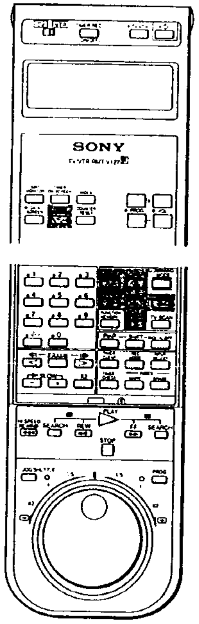
You can play back a cassette recorded in NTSC video system using the SP mode (NTSC-recorded tape) on a PAL system television set. If the tape is recorded in the Hi-Fi system, the Hi-Fi sound can be reproduced.

Slide the NTSC PB ON PAL TV ON/OFF switch to "ON" every time you watch an NTSC recorded tape.
When you watch a PAL recorded tape, return the NTSC PB ON PAL TV switch to OFF. And if you are using a TV equipped with the COLOUR SYSTEM selector switch, set the COLOUR SYSTEM selector switch to "PAL."

The following will occur during playback of an NTSC-recorded tape

- The time/tape-counter display will not appear even if you press DATA SCREEN.
- Depending on the TV you are using, the following phenomena may occur separately or in combination:
  - -the picture becomes black and white
  - -the picture shakes
  - -no picture appears on the screen
  - -black streaks appear horizontally on the screen
  - -the colour density increases or decreases
  - -the audio becomes normal audio and noise appears in LP and EP mode
- If a tape has portions recorded in PAL and NTSC video systems, the tape counter reading is not correct. This discrepancy is due to the difference between the counting cycles of the two video systems.
- You may not use the digital functions for an NTSC-recorded tape. For details see page 34.
- You canndt edit the NTSC-recorded tape onto another VCR.





Selecting the Monitor Sound

You can select the sound you want to hear when you play back a stereo or bilingual tape, or when you want to play back a tape on which sounds were mixedly recorded on the Hi-Fi audio track and the normal audio track.

Listening to a Stereo or Bilingual Tape

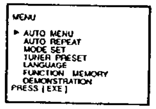
Press AUDIO MONITOR to select the sound to hear.
With each press, you change from stereo (left and right channel sounds), to left-channel sound, to right-channel sound or to the sound on the normal audio track. The selected sound type appears in the display window of the VCR.

Display	Sound heard	
	Stereo tape	Bilingual tape
STEREO	Stereo	Left and right channels
MAIN/L	Left channel	Left channel
SUB/R	Right channel	Right channel
No indication	Monaural (on normal audio track)	Sound on normal audio track

Listening to Mixed Sounds

You can hear the sounds recorded on the Hi-Fi audio track and the normal audio track at the same time. This function is useful when you listen to an audio-inserted tape. (For details on the audio insert function, see page 61.)

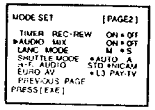
1 Press MENU.
The main MENU appears.



```
MENU

▶ AUTO MENU
  AUTO REPEAT
  MODE SET
  TUNER PRESET
  LANGUAGE
  FUNCTION  MEMORY
  DEMONSTRATION
PRESS [EXE]
```

2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "MODE SET."

3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "NEXT PAGE," then press EXE.
The MODE SET [PAGE 2] menu appears.



```
MODE SET                    [PAGE2]

 TIMER  REC-REW         ON • OFF
▶AUDIO  MIX             ON • OFF
 LANC  MODE             M   • S
 SHUTTLE MODE        • AUTO   A
 Hi-Fi  AUDIO        STD • NICAM
 EURO AV             • L3  PAY-TV
 PREVIOUS  PAGE
PRESS [EXE]
```

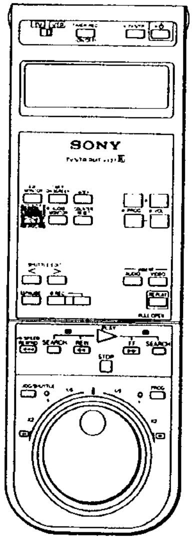
4 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "AUDIO MIX."

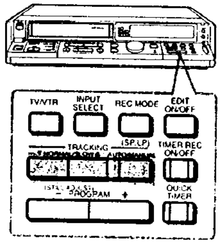
5 Select ON or OFF using ◀ or ▶ of the cursor keys.
ON: to make the AUDIO MONITOR button inoperative so that the sounds of the Hi-Fi video and normal audio tracks are always output.
OFF: to make the AUDIO MONITOR button operative so that you can select the sound to hear.

6 Press EXE to store the setting.
The TV screen returns to the original screen.

When you have finished the playback of a particular tape such as an audio inserted tape, reset the AUDIO MIX setting to OFF.

You cannot select the monitor sound in the following cases
- When a monaural tape (a tape which has no recording on its Hi-Fi track) is played back.
- When AUDIO MIX ON is selected in the MODE SET menu.





When the sound on the Hi-Fi audio track is not clear, adjust it with TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲ . When the recording condition is poor, you can't adjust.

Removing Picture Distortion

Usually, the tracking control function removes picture distortion automatically. However, occasionally, streaks or "snow" may appear on the screen when you play a video tape. When this happens, you can adjust the tracking manually.

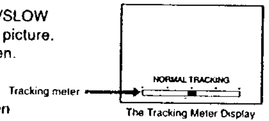
Automatic Tracking Adjustment

"AUTO TRACKING" flashes while the VCR is searching for the best tracking condition and lights steadily when it finds the best possible tracking. If the VCR cannot find the best tracking condition, adjust the tracking manually.

Manual Tracking Adjustment

1 Press DATA SCREEN to display the tape counter on screen.

2 Press ▼/▲ on the TRACKING NORMAL/SLOW (STILL/ADJUST) buttons to get the best picture.
The tracking meter appears on the screen.
The distortion should disappear as you press one of the two buttons.
The tracking meter does not appear when the NTSC ON PAL TV switch is set to ON.

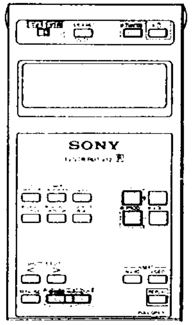


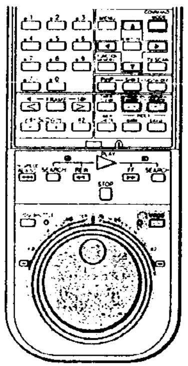
The Tracking Meter Display

When you cannot get a better picture even if you have made manual tracking, press AUTO/MANUAL to return automatic tracking adjustment mode.

To return to the tracking meter to its normal position
Simultaneously press ▼/▲ on the TRACKING NORMAL/SLOW (STILL/ADJUST) buttons.

Recording TV Programmes





You can record TV programmes in one of three ways:
-While you are watching the programme (this page)
-While you are watching another programme (See page 21.)
-While you are not watching the TV at all (See page 21.)

Before you begin

- Make sure that the connections have been made correctly (see "**Step 2** Connecting the VCR" on page 6.)
- Check that "TUNER" lights up in the VCR display panel.

Recording While Watching the TV Programme

1 Insert a cassette. (Its safety tab must be in place.)
The VCR turns on automatically (Auto power on).

2 Turn on the TV.

3 Press TV/VTR on the remote control several times until "VTR" appears in the VCR display panel. (If you have made only an aerial connection, turn to the video channel you set the VCR to in "**Step 3** Tuning the VCR to Your TV" on page 7.)

4 Select SP or LP with REC MODE (SP/LP).
In the LP mode, you can record twice as long as in the SP mode.

5 Press PROG+/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR to select the programme position.
You can also use the jog dial to select the programme position. To use this, press the PROG function button to light indicator beside the button. Turn the jog dial clockwise for higher numbered programme positions or counterclockwise for lower numbered programme positions.
The programme number will change in the VCR display panel and on the TV screen.

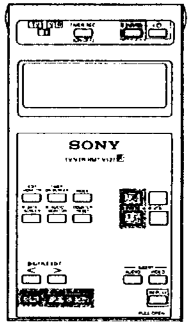
6 Press the two ●REC buttons on the remote control at the same time, or the REC button on the VCR.
The REC (recording) indication lights up in the VCR display panel.

To stop recording
Press ■STOP.

When the cassette reaches the end
The cassette rewinds to the beginning automatically and the power remains on.

If the tape is ejected when the REC buttons are pressed
The tab on the cassette is out. Use another cassette with its safety tab intact.

If you are using a Sony TV
You can use the remote control of this VCR to operate the TV. When doing this, slide the TV/VTR remote control selector at the top of the remote control to "TV." To operate the VCR, return the TV/VTR remote control selector to "VTR."



Pausing
You can stop recording an unwanted scene and resume recording smoothly.

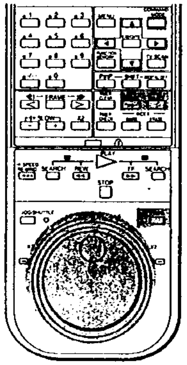
1 Press ❚❚ PAUSE when an unwanted scene appears.
Recording will stop and the VCR enters recording pause mode.

2 Press ❚❚ PAUSE again at the desired point to release pause mode.
Recording resumes from the point set in step 1.

When the recording pause mode lasts for approximately 5 minutes, the VCR enters stop mode.

Recording with the TV Off

Turn off the power of the TV or monitor.
There will be no interference with the recording.



Recording While Watching Another Programme

The recording procedure differs depending on the type of TV-VCR connection you have made.

1 Record the programme following the steps 1 to 6 on page 20.

2 Do one of the following depending on the type of connection your VCR has:

If you have made a EURO-AV connection:

1 Press TV/VTR until "VTR" disappears from the VCR display panel.

2 Select the programme you want to watch on the TV.

If you have made an aerial connection only:

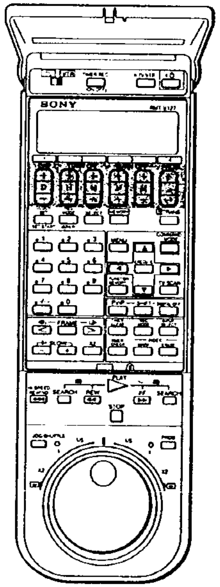
Select the programme you want to watch on the TV.

If you have made a LINE OUT VIDEO/AUDIO connection:

1 Select the tuner input on the TV.

2 Select the programme you want to watch on the TV.

Timer-Activated Recording



The timer recording function lets you preset your VCR to record up to eight programmes within a one-month period. Perform this procedure on the remote control and transmit the preset data to the VCR.

Before you begin

- Make sure that the time and date clock is set correctly (see **"Step 6** Setting the Clock" on page 11.)
- Check to see that the cassette is long enough to record all the programmes.
- Make sure that the safety tab of the cassette has not been removed. If you insert a cassette without a safety tab and try to set the timer, a short beep sound will be heard repeatedly and the cassette automatically ejects from the VCR.

Setting the Timer

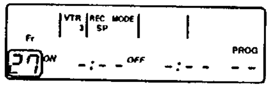
Example

Here is how to record a broadcast on programme position 8 from 20:00 to 20:50 on Friday, 27th November 1992, in SP mode.

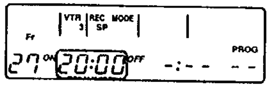
1 Open the flap of the remote control.
The remote control enters timer preset mode.

Note:
Never close the flap until you finish transmitting the programme data to the VCR.

2 Press D (DAY) until 27 appears.
The day of the week (Friday) is automatically set.

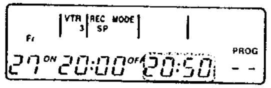


3 Press H under the TURN ON section until 20 appears.

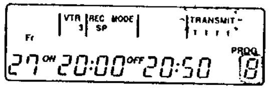


4 Press M under the TURN ON section until 00 appears.

5 Press H and M under the TURN OFF section until 20:50 appears.

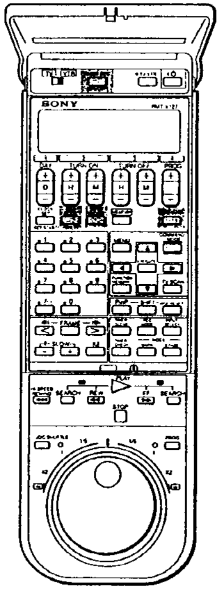


6 Press PROG+/– until 8 appears.



You can use the following buttons during timer-recording

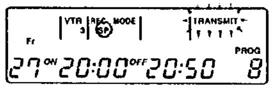
- TIMER REC (ON/OFF) to stop recording
- COUNTER RESET (See page 17)
- TV/VTR (See page 21)
- TIMER CHECK (See page 26)
- DATA SCREEN (See page 17)
- TIMER ON SCREEN (See page 25)



If power interruption occurs during timer recording
Recording will stop and your VCR will turn off. If power is restored within one hour, and it's before the recording end time, recording will start again from that point. If the interruption lasts for more than one hour, any presettings will be erased and you'll need to reset the time and date for your programmes. Note that the tape counter will return to "0H00M00S."

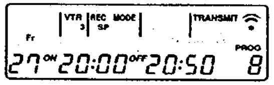
To record a satellite programme from a satellite tuner connected to EURO-AV (LINE 3) connector
Press INPUT SELECT to display "LINE L3" in the remote display. You need a commercially available timer to turn on/off the satellite tuner at the preset time. The programme position to be recorded must be preset on the satellite tuner.

7 Set the recording speed, SP or LP, with REC MODE (SP/LP).
The TRANSMIT indicator flashes to tell you that all of the items have been entered.



8 Point the remote control to the VCR and press TRANS. Press TRANS within five minutes after you have entered all the items.
A beep sound will tell you that the preset data have been transmitted to the VCR, and the VCR enters recording standby mode.
The TIMER REC indicator lights up in the VCR display panel and the contents of the timer setting you've just transmitted to the VCR also appears in the VCR display panel.
The PROGRAM LIST appears on the TV screen for a few seconds if the VCR is turned on.

To set another programme, repeat steps 2 to 8.



9 Close the flap of the remote control so that the present time appears on the remote display.
The VCR turns on automatically and starts recording at the preset time, then turns off after recording ends.

To stop timer-recording

To stop timer-recording while a programme is being recorded, press TIMER REC (ON/OFF).

To rewind the tape after timer recording is over

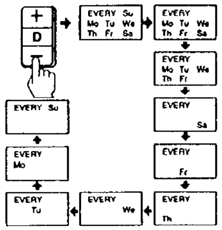
Use the TIMER REC-REW function (for details, see page 41).

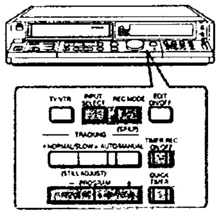
To record video source from the EURO-AV (LINE1) connector, EURO-AV (LINE3) connector or LINE IN 2 AUDIO/VIDEO jacks

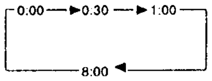
Press INPUT SELECT any time in steps 1 to 6 to change the indication from PROG-- to LINE L1 (for the EURO-AV (LINE 1) connector), LINE L2 (for the LINE IN 2 AUDIO/VIDEO jacks), or LINE L3 (for the EURO-AV (LINE3) connector).

To record a TV programme and audio signals from equipment connected to the EURO-AV (LINE 1) connector or LINE IN 2 AUDIO simultaneously.

For selecting the audio input terminal, see item "SIMUL AUDIO IN" on page 40.
Set the desired programme position and press INPUT SELECT to indicate SIMUL in step 6.


+
D
−
EVERY Su Mo Tu We Th Fr Sa
EVERY Mo Tu We Th Fr Sa
EVERY Mo Tu We Th Fr
EVERY Sa
EVERY Fr
EVERY Th
EVERY We
EVERY Tu
EVERY Mo
EVERY Su




0:00
0:30
1:00
8:00

If your cassette ends during quick-timer recording
Recording stops and the VCR turns off. The cassette will not rewind automatically.

If a power interruption occurs during quick-timer recording
Recording will stop and the VCR will turn off. If the interruption lasts less than one hour and the power is restored before the recording end time, recording will start again from the time the power is restored.

For the buttons you can use during quick-timer recording
See page 22.

Daily/Weekly Recording

You can preset your VCR for daily or weekly recording.

Daily recording records the same programme every day of the week, while weekly recording records the same programme on the same day, every week.

In step 2 of the "Setting the Timer" section (page 22), press the –(minus)-side of the D button to change the indication in the remote display to one of the choices. (See the diagram at left.) When you set and transmit your preset data to the VCR, the corresponding indicator lights up in the VCR display panel.

Quick-Timer Recording

This function is convenient for recording programmes without going through the entire timer setting procedure. Note, however, that it provides only an approximate setting for the programme you wish to record.
If you're currently recording, skip to step 7.

1 Insert a cassette into your VCR.

2 Press INPUT SELECT to select TUNER.

3 Select the desired recording speed (SP or LP) by pressing REC MODE on the inside surface of the upper drop-down panel.

4 Press QUICK TIMER on the VCR.
If you insert a cassette with the safety tab removed, your VCR will eject the cassette.

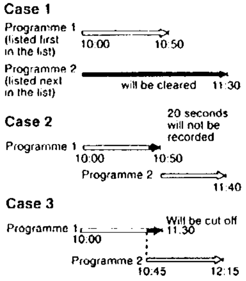
5 Select the programme position you wish to record using PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR. The programme position can be changed while the programme position indicator is flashing (for about 30 seconds).

6 Press QUICK TIMER again to start recording.
Unless you press QUICK TIMER within 30 seconds, the power will be turned off.

7 Select the recording duration by pressing QUICK TIMER to change the duration indicator in the display window.
Each time you press QUICK TIMER, the recording duration increases by 30 minutes (up to 8 hours).
Once recording has finished, your VCR will turn off automatically.
During quick-timer recording, the recording time can be changed by pressing the QUICK TIMER button. During recording, the time displayed will count down in units of one minute.

To stop quick-timer recording

To stop quick-timer recording while a programme is being recorded, press TIMER REC (ON/OFF).


Case 1
Programme 1 (listed first in the list)
10:00
10:50
Programme 2 (listed next in the list)
will be cleared
11:30
Case 2
20 seconds will not be recorded
Programme 1
10:00
10:50
Programme 2
11:40
Case 3
Will be cut off
Programme 1
10:00
11:30
Programme 2
10:45
12:15

Overlapping Timer Recordings

If you have made a "mistake" when presetting multiple programmes, the VCR will interpret your settings as described in the following cases.

Case 1: If you preset two programmes to record at the same time...

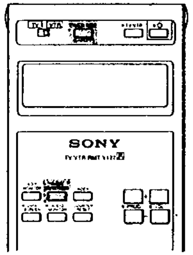
The programme listed first on the PROGRAM LIST display has priority over the other programmes. The timer settings for lower priority programmes will be deleted from the PROGRAM LIST display when recording begins for the first programme.

Case 2: If you set programme 2 to record at the same time you set programme 1 to finish recording...

The last 20 seconds of programme 1 will not be recorded.

Case 3: If you set programme 2 to record before programme 1 has finished recording...

Programme 2 will begin recording before programme 1 has finished.



Notes
- If you set a programme to record only one time, that setting is erased from the PROGRAM LIST display when the recording has finished.
- To check the timer settings during timer recording, press TIMER ON SCREEN.

Checking the Timer Settings

Here's how to display your timer settings to confirm the programmes you wish to record.

1 Press TIMER REC (ON/OFF) to release timer recording standby mode.
The TIMER REC (recording) indicator turns off in the VCR display panel.

2 Press ⏻ to turn on the VCR.

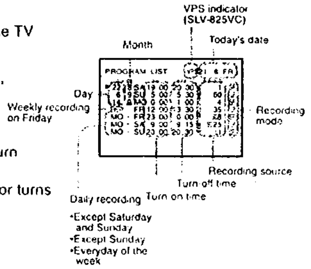
3 Press TV/VTR so that the VTR indicator lights up in the VCR display panel.

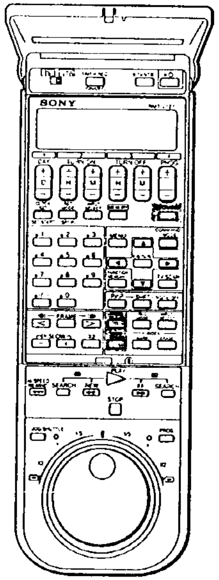
4 Turn on the TV.
If you have made only an aerial connection, turn to the video channel you set the VCR to in "Step 3 Tuning the VCR to Your TV" on page 7.

5 Press TIMER ON SCREEN.
The PROGRAM LIST appears on the TV screen for you to check.

6 After you have checked the settings, press TIMER ON SCREEN again.
The original TV screen appears.

7 Press TIMER REC (ON/OFF) to return to timer recording standby mode.
The TIMER REC (recording) indicator turns on in the VCR display panel.


VPS indicator (SLV-825VC)
Month
Today's date
PROGRAM LIST
Day
Weekly recording on Friday
Recording mode
Recording source
Turn off time
Turn on time
Daily recording
•Except Saturday and Sunday
•Except Sunday
•Everyday of the week



Changing or Cancelling the Timer Settings

Here's how to change or cancel any timer settings on the PROGRAM LIST display.

1 Display the PROGRAM LIST display on the TV screen.
Follow steps 1 through 5 of the "Checking the Timer Settings" (page 25) section.

2 Press TIMER CHECK to display the cursor (▶).

3 Press TIMER CHECK to move the cursor (▶) to the setting you want to change or cancel.

4 **To change the setting**
Re-enter all the items and transmit it to the VCR. (See "Setting the Timer" on page 22.)
The VCR returns to timer recording standby.

To cancel the setting
Press TIMER CLEAR.

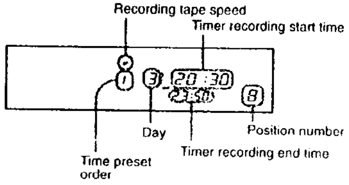
To change or cancel timer settings without using the PROGRAM LIST display

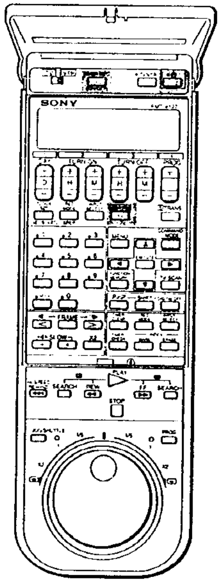
Using this method, you can change or cancel the timer settings without releasing the timer recording standby mode.

1 Press TIMER CHECK repeatedly until the programme you want to change or cancel appears in the VCR display panel.

2 **To change the timer setting,** change the settings and press TRANS to transmit it to the VCR.

To cancel the setting, press TIMER CLEAR.
The timer setting of the selected programme is cancelled.





Using the VCR Before Timer Recording Starts

1 Press TIMER REC (ON/OFF).
The TIMER REC (recording) indicator in the VCR display panel turns off and the VCR leaves the timer recording standby mode.

2 Press ⏻.
The VCR is ready to use.
A short beep sound will be heard and the message will appear on the TV screen five minutes prior to a preset timer start time.

3 After using the VCR, press TIMER REC (ON/OFF).
The VCR returns to the timer recording standby mode.

Storing the Timer Settings

Once a one-time programme has been recorded, the setting is cancelled, and if you wish to record at that time again, you need to reenter the settings. Daily /Weekly recordings are of course kept in memory and repeated until you change them. However, if you store the timer settings into the remote control's memory, you can recall the timer settings whenever you want. You can store up to four settings into the remote control's memory. Each setting is stored into one of four positions (A, B,C and D). Moreover, the recording date shifts automatically to the next week after the recording is completed. Thus, you can have easy access to the most frequently used settings, especially your favourite weekly programme.

1 Press MEMORY so that MEMORY A appears in the remote display.

2 Set all items for timer-activated recording.
(See "Setting the Timer" on pages 22 and 23.)
The setting is stored in MEMORY A.

3 If you want to store other settings, press MEMORY several times until the positions you want to store settings (B, C, or D) appears, then repeat step 2.

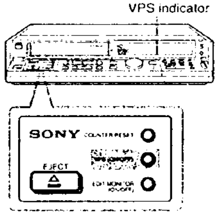
The settings are kept in memory even if you close the flap of the remote control.

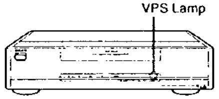
Recalling and re-entering the settings

1 Press MEMORY several times until the indication (A, B, C or D) you want to recall/change appears.

2 Make whatever changes you want.

3 Press TRANS.
The VCR enters timer-activated recording standby mode.





Notes on VPS Recording

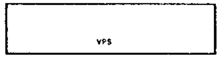
- If recording times overlap due to a VPS time shift, the programme that was broadcast first has priority. The second programme will begin to record only when the first programme has finished.
- The VPS button is effective only when TIMER REC does not light up in the VCR display panel.
- If the VPS cannot receive a VPS signal because the signal is too weak or because the station failed to transmit VPS signals, the VCR will record the programme without the VPS function regardless of the VPS indication in the VCR display panel.

VPS Recording (SLV-825VC models only)

The German broadcasting system transmits VPS (Video Programme System) signals with its TV programmes. These signals assure you that your timer recordings are made regardless of broadcast delays, early starts, or broadcast interruptions. For example, if an urgent news bulletin interrupts a regular programme, recording will stop. As soon as the interrupted programme resumes, recording starts again.

1 Make sure the "TIMER REC " indicator is not lit in the VCR display panel.

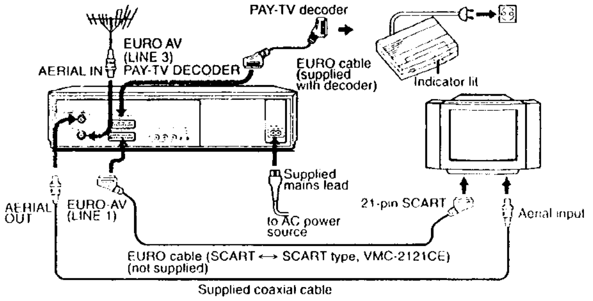
2 Before setting the timer to record, press VPS (ON/OFF) on the inside surface of the upper drop-down panel so that the "VPS" indicator lights in the VCR display panel.

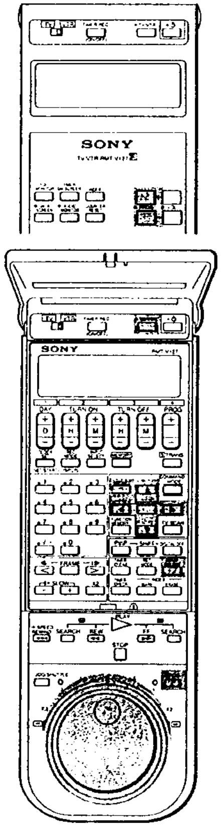


3 Set the timer following the steps of "Timer-Activated Recording" (page 22). The VCR will enter standby mode for VPS recording well before the turn-on time so as to be ready if there is a change in the start time.
The VPS lamp on the front panel lights up when the signal with VPS label is received by the VCR. The VPS indicator in the VCR display panel lights up when you press the VPS (ON/OFF) button on the inside surface of the upper drop-down panel.

PAY-TV Programme Recording (SLV-825VC models only)

You can watch or record a PAY-TV programme if you connect the decoder (not supplied) to the VCR. (See the connection below.)





Notes

- So long as the decoder is connected to the VCR, make sure to keep the mains lead of the decoder connected to an AC outlet.
- If you want to store normal television programmes, make sure that the PAY TV in the TUNER PRESET menu is set to "OFF."

Presetting PAY-TV programme Broadcasts

Before watching or recording a PAY-TV programme, you should preset PAY-TV programme broadcasts to store them into the VCR.

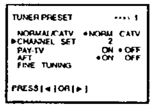
1 Turn on the VCR and TV.

2 Press INPUT SELECT so that "TUNER" appears in the front panel display.

3 Turn on the TV.

4 Press TV/VTR on the remote control several times until "VTR" appears in the VCR display panel.

5 Call up the TUNER PRESET menu. (See "**Step 5** Tuning the VCR to the Required Stations" on page 9.)



TUNER PRESET ···· 1

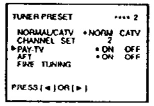
NORMAL/CATV •NORM CATV
▶CHANNEL SET 2
PAY-TV ON •OFF
AFT •ON OFF
FINE TUNING

PRESS [◀] OR [▶]

6 Press PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR to select the programme position.
You can also use the jog dial to select the programme position. To use this, press the PROG function button to light the indicator beside the button.
Turn the jog dial clockwise for higher numbered programme positions or counterclockwise for lower numbered programme positions.
The programme number will change in the VCR display panel and on the TV screen.

7 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "CHANNEL SET" and tune in PAY-TV channels.

8 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "PAY-TV" and select "ON." Then press EXE.



TUNER PRESET ···· 2

NORMAL/CATV •NORM CATV
CHANNEL SET 2
▶PAY-TV •ON OFF
AFT •ON OFF
FINE TUNING

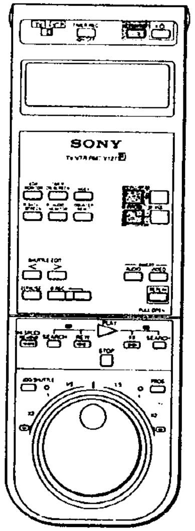
PRESS [◀] OR [▶]

Important

Once you have preset a single TV programme with the PAY-TV setting ON, the upper EURO-AV connector on the rear of the VCR can't be used as an external connector (LINE 3), but can only be used as the connector which is connected with the PAY-TV decoder. Because of this, "LINE 3" will not appear even if you press the INPUT SELECT button. The input mode indication will then change as:

TUNER ⟶ SIMUL ⟶ LINE 1
↑ ⟵ LINE 2 ⟵

If all the TV programmes are preset again with the PAY-TV setting OFF, the upper EURO-AV connector can be used as a LINE 3 input terminal and LINE 3 becomes effective when you connect any other equipment except the PAY-TV decoder to this connector.



Notes

- If the VCR records a PAY-TV programme which has been preset in the VCR's memory, this PAY-TV programme is not decoded on your TV even if you tune in this programme on your TV.
- You cannot use the subtitle superimposing function unless the 21-pin EURO-AV cables which are compatible with the RGB signals, are used for both the decoder-VCR and VCR-TV connections.

Recording a PAY-TV programme

Turn on the power of the decoder first.
For the steps other than described below, refer to "Recording TV Programmes" on page 20.

To record a PAY-TV programme while watching it
Select a PAY-TV programme using PROG +/– on the flap of the remote control.

To watch a normal TV programme while recording a PAY-TV programme
Press TV/VTR so that "VTR" goes off, then select a normal television programme you want to watch on the TV.

To watch a PAY-TV programme while recording a normal television programme
Press TV/VTR to turn off "VTR", then select a PAY-TV programme you want to watch on the TV.

The following table will show you which indicators are lit during the watching and recording of a PAY-TV programme.

VTR indicator	To watch	To record
Lit	PAY-TV programme	PAY-TV programme
Unlit	Normal television	PAY-TV programme
Unlit	PAY-TV programme	Normal television

Recording a PAY-TV programme using the timer-activated recording function

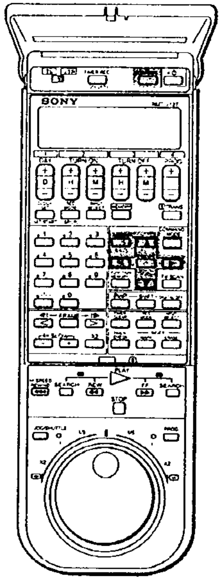
Select a PAY-TV programme in step 6 of "Setting the Timer" on page 22. The other steps are the same as the normal timer-activated recording. The PAY-TV decoder must be kept turned on.

Watching a PAY-TV programme with the VCR turned off

Select a PAY-TV programme you want to watch on the TV.

Subtitle superimposing

Put the subtitle ON/OFF switch of the decoder to ON. Note that you cannot record the subtitle on the VCR.



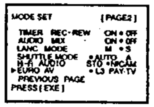
Notes

- Depending on the equipment you connect to the EURO-AV (LINE 3) connector, the selector equivalent to the TV/VTR switching selector is not always set to the "TV" position. In this case you always have the output of this equipment on the TV. When you don't need to watch, turn off the power of this equipment.
- The line-through function does not support the RGB signals. Accordingly, if the connected equipment outputs superimpose signals, you can't watch them.

Temporarily using the EURO-AV (LINE 3) PAY-TV DECODER Connector as LINE 3 Input Terminal

Once you have done PAY-TV presetting, the upper EURO-AV connector on the rear of the VCR becomes the connector exclusively for a PAY-TV decoder. If you want to temporarily use this connector as a LINE 3 input connector for dubbing the tape, do the following.

1. Turn on the VCR and TV.
2. Press TV/VTR on the remote control several times until "VTR" appears in the VCR display panel.
3. Press MENU.
   The main MENU appears.
4. Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "MODE SET."
5. Press EXE.
   The MODE SET menu appears.
   If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "NEXT PAGE", then press EXE.
   The MODE SET [PAGE 2] menu appears.
6. Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "EURO AV."
7. Select "L3" using ◀ or ▶ of the cursor keys.
8. Press EXE.



```
MODE SET                    [PAGE2]

  TIMER   REC-REW       ON • OFF
  AUDIO   MIX           ON • OFF
  LANC  MODE            M   • S
  SHUTTLE MODE        • AUTO   A
  Hi-Fi  AUDIO        STD • NICAM
▶EURO  AV              • L3  PAY-TV
  PREVIOUS  PAGE
PRESS[EXE]
```

Now you can use the upper EURO-AV connector as LINE 3 input terminal (if you connect a PAY-TV decoder to this connector, a PAY-TV programme is not decoded.)

To use the upper EURO-AV connector exclusively for the PAY-TV decoder again, perform steps 1 to 6, select "PAY-TV," then press EXE.
You don't need to preset PAY-TV programmes again to watch and record. The programmes you have preset in the VCR's memory as PAY-TV programmes will still be effective.

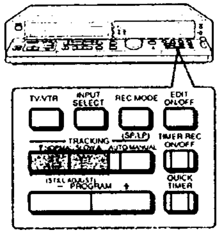
Line-through

With the line-through function, you can watch a picture coming from a source connected to your VCR through the EURO-AV (LINE 3) connector even though your VCR is turned off.
For this function to work, you need the following conditions:

- The source equipment should be connected to the VCR's upper 21-pin EURO-AV (LINE 3) connector with a 21-pin EURO-AV cable.
- The source equipment needs to have a TV/VTR, TV/DISC, TV/SAT or equivalent selector switch, which you set to the non-TV position. (The VTR indicator should not be lit in the VCR display panel.)
- The VCR's lower EURO-AV (LINE 1) connector and your TV are connected with a 21-pin EURO-AV cable.

To watch a TV programme rather than the picture from the source connected to the VCR, simply set the TV/VTR switch of the connected equipment (which may be called TV/DISC, TV/SAT, or an equivalent) to the "TV" position.

Variable Speed Playback



The following section explains the advanced playback functions available on your VCR. No sound is heard during these operations.

Replay

During playback and playback pause, press REPLAY.
The VCR replays in slow-motion the last two seconds of the scene just played back. After replay is over, the VCR resumes normal playback (or playback pause).
If you continue to press REPLAY, the tape will rewind as long as the button is held down. However, slow playback continues for about more than one minute, the VCR resumes normal playback automatically.

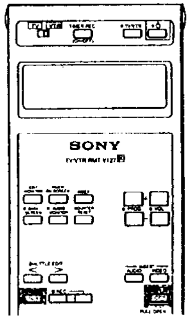
Still Picture

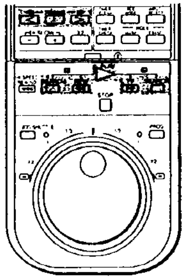
During playback, press II PAUSE to hold the picture in one place.

To resume normal playback, press either ► PLAY or II PAUSE.

If you leave your VCR in pause mode, normal playback resumes after approximately 5 minutes.

To reduce the bands on the top or bottom of the screen in still mode
Change to the slow motion play mode and adjust the picture with TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲.
To reduce the picture shaking during still mode
Adjust the picture with TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲.





Note
During variable speed playback, "streaks" or "snow" may appear on the picture, the picture may flicker and the colour may not be reproduced properly depending on the speed or the direction.

Picture Search (During Playback)

Press ►► FF or ◄◄ REW during playback.

When you release the button, normal playback will resume.

Locked Picture Search

This feature works only from the remote control.

Press ⊞ or ⊞ SEARCH on the remote control in the playback mode.
For the reverse direction, press the left ⊞ SEARCH button. For the forward direction, press the right ⊞ SEARCH button.

To resume normal playback, press ► PLAY.

Frame-by-Frame Picture

This feature works only from the remote control.

During playback pause, press II► on the remote control to advance the picture one frame or ◄II to go back one frame.

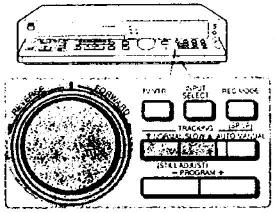
To resume normal playback, press ► PLAY.

Reversing the Normal Playback

This feature works only from the remote control.

Press ◄II (<) during normal playback.

—19—



Slow Motion Playback

This feature works only from the remote control.

Press I► SLOW +/– to start slow motion playback during playback.

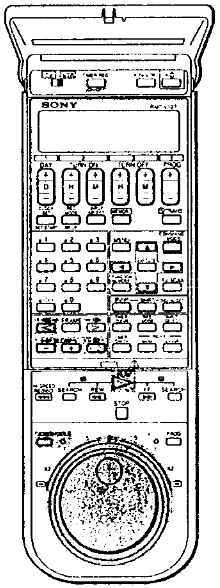
You can change the playback speed of slow motion playback from 1/5 to 1/30 times the normal speed.
Press I► SLOW + to increase the playback speed.
Press I► SLOW – to decrease the playback speed.

To resume normal playback, press ► PLAY.

To play back in the reverse direction
Press ◄II (<).

To resume normal playback, press ► PLAY.

To reduce streaks or "snow" during slow motion playback
Adjust the picture with TRACKING NORMAL/SLOW (STILL ADJUST) ▼/▲ on the inside surface of the upper drop-down panel of the VCR.



X2 Double Speed Playback

This feature works only from the remote control.

Press X2 on the remote control.

To playback in the reverse direction
Press ◄II (<).

To resume normal playback, press ► PLAY.

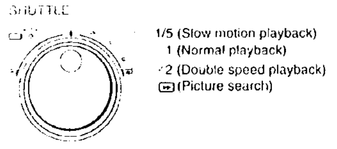
JOG/SHUTTLE Operation

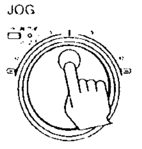
Using the JOG dial and SHUTTLE ring on the VCR or the remote control during playback or playback pause, you can play back cassettes at a variety of speeds, in either forward or reverse direction.

Using the SHUTTLE ring
1* Press the JOG/SHUTTLE function button.
The indicator beside the button lights up.
2 Turn the ring and hold it.
Playback speed is selected according to the turning angle as illustrated. The same speeds are available in the reverse direction.

Using the JOG dial
1* Press JOG/SHUTTLE function button.
The indicator beside the button lights up.
2 Turn the dial.
Playback speed varies according to the speed at which you turn the dial (frame-by-frame, slow, x1). The same speeds are available in the reverse direction.

Note
It takes about two or three seconds to reverse the direction in slow motion playback or frame-by-frame picture.

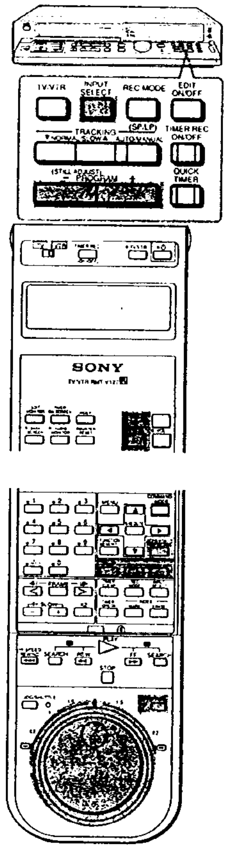




remote control only

Releasing JOG/SHUTTLE produces a still picture.
To resume normal playback, press ► PLAY.

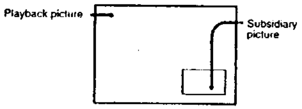
Watching Multiple Picture



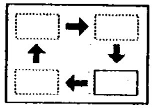
Using the digital memory built in this VCR, you can enjoy a couple of digital operations.

Using P in P (Picture in Picture)

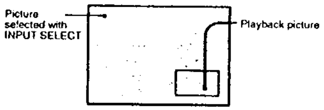
If you want to insert a small picture, press P in P.
The subsidiary picture selected using INPUT SELECT will appear on the TV screen.



To change the position of the subsidiary picture
Press SHIFT repeatedly until the desired position is reached.



To swap pictures
Press P in P again.
The sound is also switched.

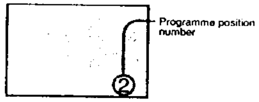


To turn off the subsidiary picture
Press DIGITAL OFF.

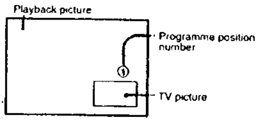
Using TV Scan

You can watch all preset TV programmes in succession while you are watching a TV programme or during playback.

During watching a TV programme
Press TV SCAN.
After all preset programmes are scanned, the first programme will appear again.



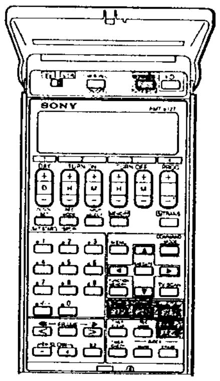
During playback
Press TV SCAN.
Each preset programme will be displayed on the subsidiary screen for a few seconds in order of programme position numbers. After all the preset programmes are scanned, the first programme will appear.



To stop scanning at the programme position you want to watch
Select the programme position you want to watch using the programme position number buttons on the remote control. Or you can use PROG +/– on the remote control or PROGRAM +/– on the VCR or you can press the PROG function button so that the indicator beside the button lights up and turn the JOG dial on the remote control.

To turn off the subsidiary picture
Press DIGITAL OFF.

Notes
- When you use P in P during the playback of an NTSC-recorded tape, the lower part of a subsidiary picture may not appear and/or noise will appear in the lower part of a subsidiary picture. The lack of the picture and noise are due to the difference of the video systems.
- If all preset programmes are scanned during TV SCAN operation, TV SCAN stops scanning the preset programmes.



Notes on the PAY-TV programmes (SLV-825VC models only)
- If the PAY-TV programme is not preset on the VCR, the PAY-TV programme will not appear either on the main screen or the subsidiary screen.
- If you have made VCR-TV connection using the EURO-AV connection, the decoded picture of the PAY-TV programme will appear either on the main screen or on the subsidiary screen, and not appear on both screens at the same time. When you select TUNER or SIMUL using INPUT SELECT, the picture of the PAY-TV programme will appear as follows:
  - When the PAY-TV programme is preset to ON, it will appear only on the main screen.
  - When the PAY-TV programme is not preset (PAY-TV setting is OFF), it will appear only on the subsidiary screen.

  When you select LINE L1, L2 or L3, however, the PAY-TV programme will not appear on the main screen.

Using TV in TV

If you want to watch two TV programmes at the same time, you can tune one with the TV and the other with the VCR. Using the P in P function one will appear in the subsidiary screen, and one will appear on the main screen. The TV and the VCR must be connected with the EURO-AV cable.

1 Press INPUT SELECT to display " TUNER" in the VCR display panel.

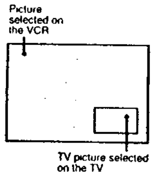
2 Press TV/VTR to turn on the VTR indicator.
The programme selected on the VCR appears on the screen.

3 Press P in P.
The programme selected on the TV appears on the subsidiary screen.

To change the position of the subsidiary picture
Press SHIFT repeatedly until the desired position is reached.

To turn off the subsidiary picture
Press DIGITAL OFF.

How to select the main picture and the subsidiary picture



If you press INPUT SELECT, the picture on the main screen and the subsidiary screen changes as follows. The audible sound is determined according to the input mode selected with INPUT SELECT.

INPUT SELECT position	Main picture	Subsidiary picture
TUNER	The programme selected on the VCR	TV programme selected on the TV
SIMUL	TV programme selected on the VCR	TV programme selected on the TV
LINE L1	TV programme selected on the TV	TV programme selected on the VCR
LINE L2	Picture of the equipment connected to LINE IN 2 VIDEO	TV programme selected on the VCR
LINE L3	Picture of the equipment connected to LINE 3 (EURO-AV)	TV programme selected on the VCR

Notes
- You cannot change the programme position of the VCR if it appears on the subsidiary screen.
- If you have preset "PAY-TV" to "ON" in the TUNER PRESET menu, you can't select "LINE 3."
The input mode indicator changes cyclically as follows:

►TUNER→ SIMUL→ LINE L1
LINE L2◄

Using the On-Screen Menus

When you make a specific setting or select a series of tape operations while using yous VCR, you sometimes need to open the MENU screen. The following table shows you when and why you need to select the menu options.

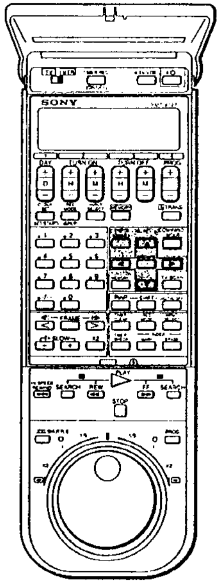
AUTO MENU	Select this item to perform certain operations in sequence. See page 37 for details.
AUTO REPEAT	Select this item to repeat certain portions of a tape. See page 39.
MODE SET	Select this item to customize your VCR. See page 40.
TUNER PRESET	See page 9.
LANGUAGE	Select this item to display the menu in your language (ENGLISH, DEUTSCH, FRANÇAIS, ITALIANO, ESPAÑOL, NEDERLANDS) . See page 12.
FUNCTION MEMORY	Select this item to keep a certain operation in memory. See page 38.
DEMON-STRATION	Select this item to get an overview of the on-screen menus. While the VCR is showing a sequence of the DEMONSTRATION menu, you can stop at the desired screen by pressing EXE. Press EXE again to start again. To quit the demonstration, press any button except for EXE.

Before you begin

- Use ▲ or ▼ to move the cursor (▶).
- Use ◀ or ▶ to select items.
- To quit setting in the middle of the procedure, press MENU.

Assigning a Desired Operation-AUTO MENU/ FUNCTION MEMORY

You can get the VCR to perform certain functions in sequence automatically. The AUTO MENU guides you to your desired sequence of operations. You can choose from the eight AUTO MENU choices. Moreover, one of the AUTO MENU choices you selected can be assigned to the FUNCTION MEMORY button on the remote control.



Note on AUTO MENU operation
AUTO MENU cannot be operated if there is no cassette installed or if the tape is being transported. A short beep alerts you if the AUTO MENU is not operable.

Note on "GO TO REC START-PLAY"
The recording start point data will be erased from the memory after the following operations, and "GO TO REC START-PLAY" will not be operable.

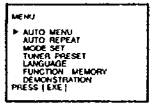
- When COUNTER RESET is pressed.
- When cassette is ejected and re-inserted.
- When HI-SPEED REWIND is pressed.

AUTO MENU Setting

1 Press MENU.
The main MENU appears.

2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to AUTO MENU.

3 Press EXE.
The display changes to the "AUTO MENU" display.

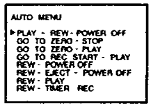


MENU

▶ AUTO MENU
AUTO REPEAT
MODE SET
TUNER PRESET
LANGUAGE
FUNCTION MEMORY
DEMONSTRATION
PRESS [EXE]

4 Press ▲ or ▼ of the cursor keys to select the menu choice you want. For menu choices, see below.

5 Press EXE to return to the original screen.
The selected operation will begin. The menu choice you selected will be superimposed on the TV screen for a few seconds.
The AUTO indicator will light up in the VCR display panel during AUTO MENU operation.

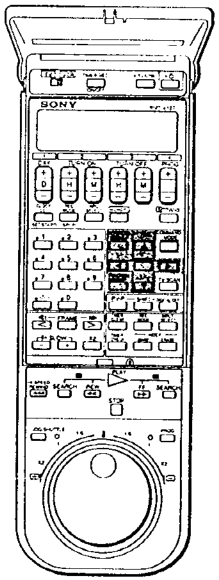


AUTO MENU

▶PLAY - REW - POWER OFF
GO TO ZERO - STOP
GO TO ZERO - PLAY
GO TO REC START - PLAY
REW - POWER OFF
REW - EJECT - POWER OFF
REW - PLAY
REW - TIMER REC

Menu choices

- ■ PLAY-REW-POWER OFF
  Plays back the tape, rewinds the tape when it reaches the end, and turns off the power.
- ■ GO TO ZERO-STOP
  Searches for the counter zero point and stops.
- ■ GO TO ZERO-PLAY
  Searches for the counter zero point and starts playback.
- ■ GO TO REC START -PLAY
  Searches for the recording start point and starts playback.
- ■ REW-POWER OFF
  Rewinds the tape to the beginning and turns off the power.
- ■ REW-EJECT-POWER OFF
  Rewinds the tape to the beginning, ejects the cassette, and turns off the power.
- ■ REW-PLAY
  Rewinds the tape to the beginning and starts playback.
- ■ REW-TIMER REC
  Rewinds the tape to the beginning and puts the VCR in timer recording standby mode when the timer is preset.



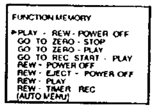
FUNCTION MEMORY

1 Press MENU.
The main MENU appears.

2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to FUNCTION MEMORY.

3 Press EXE.
The FUNCTION MEMORY menu appears.

4 Move the cursor (▶) to the menu choice you want and press EXE.



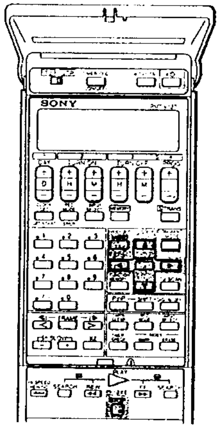
FUNCTION MEMORY

▶PLAY - REW - POWER OFF
GO TO ZERO - STOP
GO TO ZERO - PLAY
GO TO REC START - PLAY
REW - POWER OFF
REW - EJECT - POWER OFF
REW - PLAY
REW - TIMER REC
(AUTO MENU)

If you have selected [AUTO MENU], you can directly go to the AUTO MENU simply by pressing FUNCTION MEMORY, without displaying the main MENU. This is a short cut to the AUTO MENU.

For the menu choices, see the previous page.
The menu choice you selected will be activated every time you press FUNCTION MEMORY when the VCR is in stop mode.

Repeating Playback Automatically —AUTO REPEAT



Notes on AUTO REPEAT operation
- If you press any tape operation button during repeat playback, AUTO REPEAT will be released.
- AUTO REPEAT cannot be operated if there is no cassette installed or if the VCR is in modes other than stop mode. A short beep alerts you if the AUTO REPEAT is not operable.

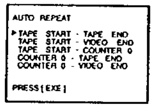
Note on "VIDEO END"
The VCR normally detects a blank of about 10 seconds on the tape as "VIDEO END."
However, for about 30 seconds from the beginning of the tape, the VCR does not do this.

AUTO REPEAT will not work correctly in the following cases
- When there is a blank of more than 10 seconds in the assigned repeat portion (more than 40 seconds at the beginning).
- When there is a blank of less than 10 seconds after the recorded portion to be played back repeatedly.
- When the tape is recorded to its end. (Select the menu choice including "TAPE END.")

You can make the VCR repeat playback of a certain portion of the tape automatically.

1 Press MENU while the VCR is in the stop mode.
The main MENU appears.

2 Press ▲ or ▼ of the cusor keys to move the cursor (▶) to AUTO REPEAT and press EXE.
The AUTO REPEAT menu appears.



AUTO REPEAT

▶TAPE START - TAPE END
TAPE START - VIDEO END
TAPE START - COUNTER 0
COUNTER 0 - TAPE END
COUNTER 0 - VIDEO END

PRESS [EXE]

3 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to the menu choice you want and press EXE.
The VCR will rewind or advance the tape rapidly to the start point of the selected repeat portion and start playback. Playback of that portion will be repeated five times and then the VCR will rewind the tape to the start point.
The AUTO indicator will light in the VCR display panel during AUTO REPEAT operation.

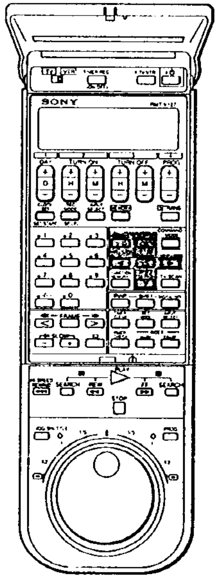
To stop playback

Press ■ STOP on the VCR or on the remote control.

Menu choices

- **TAPE START-TAPE END**
  Repeats playback from the beginning to the end of the tape.
- **TAPE START-VIDEO END**
  Repeats playback from the beginning of the tape to the end of the recorded portion.
- **TAPE START-COUNTER 0***
  Repeats playback from the beginning of the tape to the counter zero point.
- **COUNTER 0*-TAPE END**
  Repeats playback from the counter zero point to the end of the tape.
- **COUNTER 0*-VIDEO END**
  Repeats playback from the counter zero point to the end of the record portion of the tape.

* Before activating AUTO REPEAT, you must press COUNTER RESET on the VCR or on the remote control to set the tape counter to 0H00M00S at the desired point.



Important
Do not set RF MODULATOR to "OFF" when you have made the VCR-TV connection via the AERIAL IN socket only.
If the RF MODULATOR is set to "OFF", no picture will appear on the TV screen. In this case, press the CL button inside the lower drop-down panel with a pointed object. Since this will clear all stored information (e.g., the clock and any preset information), you must set them once again.

Note
The position of the cursor remains the same as long as the mains lead is connected.

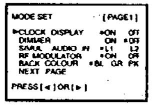
Customizing Your VCR—MODE SET

You can customize your VCR using the MODE SET menu.

1 Press MENU.
The main MENU appears.

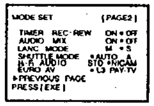
2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to MODE SET.

3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "NEXT PAGE", then press EXE.
The MODE SET [PAGE 2] menu appears.



```
MODE SET              [PAGE1]

▶CLOCK DISPLAY      •ON    OFF
 DIMMER              ON   •OFF
 SIMUL AUDIO IN     •L1     L2
 RF MODULATOR       •ON    OFF
 BACK COLOUR     •BL   GR   PK
 NEXT PAGE

PRESS[◀]OR[▶]
```

[PAGE 1] menu



```
MODE SET              [PAGE2]

 TIMER REC-REW      ON •OFF
 AUDIO MIX          ON •OFF
 LANC MODE           M  •S
 SHUTTLE MODE     •AUTO  A
 Hi-Fi AUDIO     STD •NICAM
 EURO AV          •L3 PAY-TV
▶PREVIOUS PAGE
PRESS[EXE]
```

[PAGE 2] menu

4 Press ▲ or ▼ of the cursor keys to move the cursor to the menu choice you want, then press ◀ or ▶ of the cursor keys to move the dot (•) to select the item.
For the menu choices, see below.

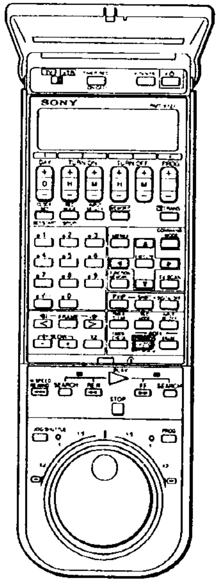
5 Press EXE to store the setting.

Menu choices

- **CLOCK DISPLAY**
  Select "ON" to display the current date and time in the data screen, and select "OFF" to turn off the current date and time in the data screen.
- **DIMMER**
  Select "ON" to make the display window dimmer and select "OFF" to make the display window brighter.
- **SIMUL AUDIO IN**
  Select "L1" to select the audio source from the LINE IN 1 connector during simul recording and select "L2" to select the audio source from the LINE IN 2 jacks during simul recording.
- **RF MODULATOR**
  Select "ON" if you have made the VCR-TV connection via the aerial socket only. Select "OFF" if you have made the VCR-TV connection via the EURO-AV connector.
  If interference occurs when you use the aerial socket, make the EURO-AV connection and set the RF MODULATOR to "OFF."

- **BACK COLOUR**
  Select the background colour you want : BL (blue), GR (green) or PK (pink).
- **TIMER REC-REW**
  Select "ON" to automatically rewind the tape after timer recording is over and select "OFF" to cancel this setting.
- **AUDIO MIX**
  Select "ON" to make the AUDIO MONITOR button inoperative so that the sounds of the hi-fi video and normal audio tracks are always output and select "OFF" to make the AUDIO MONITOR button operative so that you can select the sound to hear (for details, see page 47).
- **LANC MODE**
  Select "M" to control the other VCR using the synchronized editing function of this VCR and select "S" in any other cases (for details, see page 58).
- **SHUTTLE MODE**
  Normally set to "AUTO." The VCR detects automatically whether the other VCR has a reverse slow-motion playback function or not. If the other VCR doesn't perform tape movement as you operated, select "A."
  When you select "A", the tape will come to move only in the forward direction, and the JOG dial doesn't work (for details, see page 58).
- **Hi-Fi AUDIO (SLV-825UB and SLV-825NC models only)**
  Select "NICAM" to record a NICAM broadcast on a Hi-Fi audio track and select "STD" to record only standard sound on a Hi-Fi audio track (for details see page 46).
- **EURO AV (SLV-825VC models only)**
  Select "PAY-TV" to use the EURO-AV (LINE 3) PAY -TV DECODER connector to connect a PAY-TV decoder only after the PAY-TV presetting has been done. Select "L3" to use this connector as a LINE 3 connector temporarily (for details, see page 31).

Index Function



You can find specific scenes easily using the markings (index points) recorded on a cassette. This function is called the Index Function.
You can mark an index anywhere on a tape, so that you can easily find the specific point later on. Index works as a divider between scenes, and is not numbered. So, when you specify the index mark later, you have to specify the relative position from the current position. (The first index, the second index....from the current position.)
You can mark and erase index signals during playback, but while recording, you cannot erase them.

Marking Index Signals

Where you mark an index, the INDEX indicator flashes in the VCR display panel and the INDEX MARK indicator appears on your TV screen.

Automatic Index Mark

An index signal is automatically recorded at the beginning of a scene when you start recording.

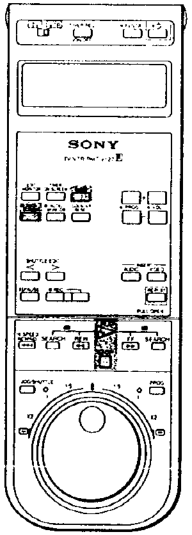
Manual Index Mark

When recording or playing a cassette, you can manually mark an index signal by pressing INDEX MARK.

When you mark an index signal during playback, the recorded sound may be interrupted but the audio signal will not be erased.

Notes on marking indexes

- Leave an interval of at least 2 minutes between indexes so that the VCR can detect the signals correctly.
- You cannot mark an index signal in the following cases:
  - On a cassette whose safety tab has been removed
  - On an unrecorded portion of a tape
  - Immediately before a point on the cassette where the tape speed (SP or LP) changes.



Playing Back from the Index Point— Index Scan

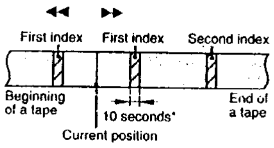
Here's how to find and play a programme you've marked with an index signal.

1 Insert an indexed cassette into your VCR

2 Press DATA SCREEN to display the data screen.

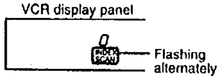
3 Press INDEX once.
The INDEX and SCAN indicators flash alternately in the VCR display panel and the INDEX SCAN indicator appears on the TV screen.

4 Press ◀◀ to find the previous programme or ▶▶ to find the next programme.
The index scan locates the next index signal and plays about 10 seconds of tape prior to the signal (10-second preview). The VCR then rewinds or advances to the next index signal.
Every time the VCR finds an index signal, 10-second preview begins.

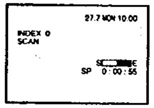


* When the cassette speed is SP.

VCR display panel

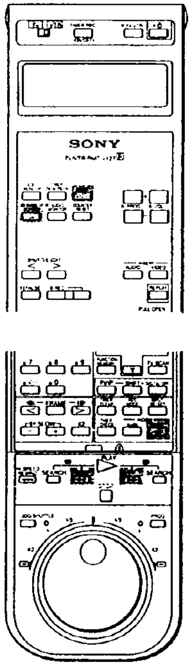


TV Screen



5 When you find the programme you want, press ▶ PLAY during the 10-second preview. Playback starts from that point.

To stop index scan underway
Press ▶ PLAY or ■ STOP.

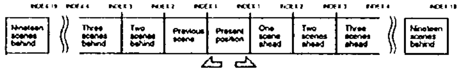


Locating an index— Index Search

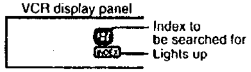
Locate an index by indicating how many index signals ahead or behind the scene is from the tape's current position. You can specify up to the 19th index point either ahead or behind the current position.

1 Press DATA SCREEN to display the data screen.

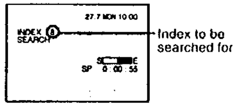
2 Press INDEX until the index number you want appears.


Nineteen scenes behind
Three scenes behind
Two scenes behind
Previous scene
Present position
One scene ahead
Two scenes ahead
Three scenes ahead
Nineteen scenes behind

VCR display panel


Index to be searched for
Lights up

TV Screen


27.7 MON 10:00
INDEX SEARCH
SP 0:00:56
Index to be searched for

3 Press ▶▶ FF to find an upcoming index signal or ◀◀ REW to find a prior index signal.
The cassette advances or rewinds to find the signal.
Each time an index signal is detected, the index number decreases.
When the index number reaches 0, it means you've located the specified scene and your VCR will begin to play.

Erasing Index Signals

To remove any unwanted index signals, follow these steps:

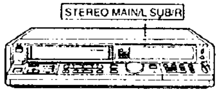
1 Press INDEX once during playback or stop mode.

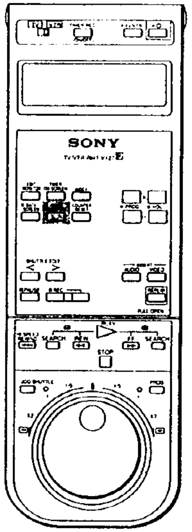
2 Press ▶▶ FF to find the next scene or ◀◀ REW to find the previous scene. Each time an index is detected, the VCR plays back the indexed scene for approximately 10 seconds. It then rewinds or advances to the next index signal. This 10 second preview lets you decide whether you've located the index mark you want to erase.

3 Press INDEX ERASE during 10 seconds preview.
"INDEX ERASE" is displayed on the TV screen. The VCR automatically rewinds the tape to a position before that index, and erase the index. After one index is erased, the next index is located.

Note
You cannot erase an index signal at the beginning of the tape.

Recording Stereo/Bilingual Programmes

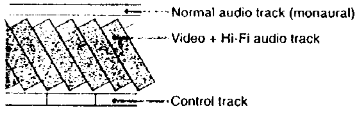

STEREO MAIN/L SUB/R



SLV-825/825VC/825NC Models

The SLV-825/825VC/825NC can receive and record stereo/bilingual programmes based on the "Zweiton" system adopted in Germany. Recording of the Zweiton system programmes is automatically done. A stereo or bilingual programme is recorded on the Hi-Fi audio track and normal audio track as shown below.

Hi-Fi recording pattern on a tape


Normal audio track (monaural)
Video + Hi-Fi audio track
Control track

Where the sound is recorded

Stereo programme
When a stereo programme is received, "STEREO" appears in the VCR display panel and the sound is recorded as follows:
Left channel: on the left channel of the Hi-Fi audio track
Right channel: on the right channel of the Hi-Fi audio track
Mixed of the left and right channels (monaural): on the normal audio track

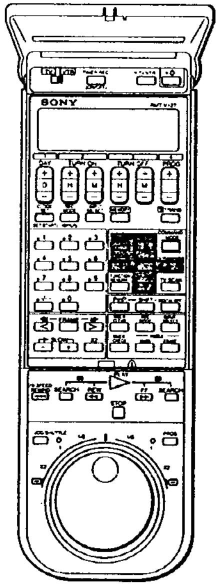
Bilingual programme
When a bilingual programme is received, "MAIN/L" appears in the VCR display panel and the sound is recorded as follows.
Main: on the left channel of the Hi-Fi audio track and on the normal audio track
Sub: on the right channel of the Hi-Fi audio track

How to select the sound you hear

Stereo programme
The AUDIO MONITOR button does not function for the stereo programmes of the Zweiton system.

Bilingual programme
When the VCR receives a bilingual programme, "MAIN/L" appears in the VCR display panel and you can select the sound to hear.
Press AUDIO MONITOR several times until you can hear the sound you want.
With each press, the sound is cyclically changed in the following order.

Display	Sound heard
MAIN/L	Main sound
SUB/R	Sub sound
MAIN/L SUB/R	Main sound on the left channel Sub sound on the right channel



Note
When there is no NICAM broadcast, the standard sound will be recorded on both the Hi-Fi video track and the normal audio track.

SLV-825UB/825NC Models

The SLV-825UB/825NC can receive and record stereo/bilingual programmes based on the "NICAM" system adopted in the United Kingdom and Nordic countries. NICAM broadcasting has two-channel digital sound called NICAM L and R channels in addition to the standard sound. The NICAM L and R are assigned to the stereo left and right channels or the main and sub sounds of a bilingual programme. The standard sound of most NICAM broadcasts is the mixed sound of the left and right channels for a stereo programme, and the main sound for a bilingual programme.

Recording NICAM broadcasts

You need to select "NICAM" of "HI-FI AUDIO" in the MODE SET [PAGE 2] menu.

1 Before recording a NICAM broadcast, press MENU.
The main MENU appears.

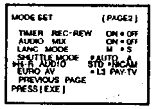
2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to MODE SET.

3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "NEXT PAGE", then press EXE.

4 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to Hi-Fi AUDIO.

5 Select NICAM using ◀ or ▶ of the cursor keys.

6 Press EXE to store the setting.



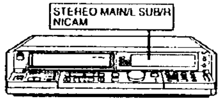
```
MODE SET              [PAGE2]

  TIMER  REC-REW      ON • OFF
  AUDIO  MIX          ON • OFF
  LANC   MODE         M   • S
  SHUTTLE MODE      •AUTO  A
▶Hi-Fi  AUDIO       STD •NICAM
  EURO  AV          • L3 PAY-TV
  PREVIOUS  PAGE
PRESS [EXE]
```

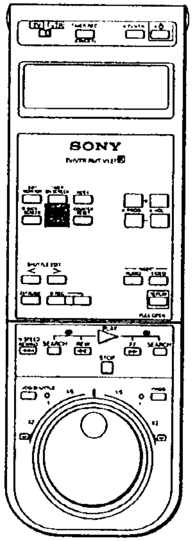
With NICAM setting, NICAM broadcasts will be recorded as shown in the following table.

Track	Sound heard	
	Stereo	Bilingual
Hi-Fi audio left channel	Left channel	Main
Hi-Fi audio right channel	Right channel	Sub
Normal audio	Standard	Standard

To record the standard sound only

Follow the operation above and set Hi-Fi AUDIO to STD in step 5.
The standard sound will be recorded on the left and right channels of the Hi-Fi video track and the normal audio track.





How to select the sound you hear

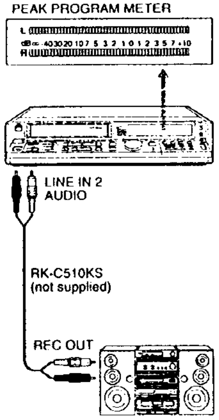
Stereo programme
When a stereo programme is received, "STEREO" and "NICAM" appears in the VCR display panel and you can select the sound to hear.
Press AUDIO MONITOR.
With each press, the STEREO (NICAM L and R channels) or the standard sound is selected alternately.

Display panel	Sound heard
STEREO	Left channel sound on the left channel and right channel sound on the right channel
No indication	Standard sound

Bilingual programme
When a bilingual programme is received, "NICAM" and "MAIN/L" appears in the VCR display panel and you can select the sound to hear.
Press AUDIO MONITOR several times until you can hear the sound you want.
With each press, the sound is cyclically changed in the following order.

Display panel	Sound heard
MAIN/L	Main sound
SUB/R	Sub sound
MAIN/L, SUB/R	Main sound on the left channel and sub sound on the right channel
No indication	Standard sound

Audio Recording



The Hi-Fi recording system of this VCR allows recording of high quality stereo sound from an FM tuner, audio system, or other audio equipment.

Before you begin

- Connect your audio system to the LINE IN 2 AUDIO jacks using the RK-C510KS audio connecting cable (not supplied).
- Set INPUT SELECT to LINE L2.
- Select REC MODE, SP or LP.

Adjusting the Audio Recording Level

Play the recording source. While observing the PEAK PROGRAM METER on the VCR, adjust the REC LEVEL controls as follows.

When recording from records: Adjust the level so that the right-most element (+10) lights up sometimes.

When recording from CDs or using a PCM processor: Adjust the level so that the right most element (+10) lights up only when the signal is input at its maximum level.

Recording

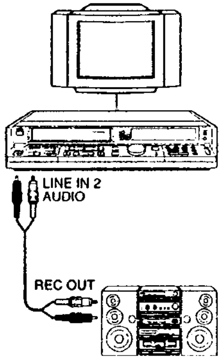
The recording procedure is the same as "Recording While Watching the TV Programme" on page 20.

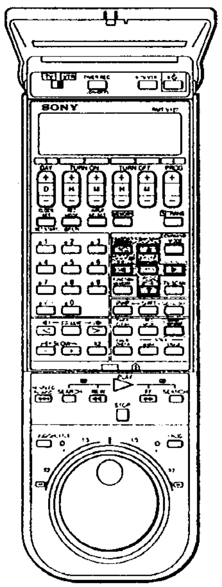
PCM Recording and Playback

You can perform PCM recording and playback on the video track by connecting a PCM digital audio processor to the LINE IN and OUT VIDEO jacks on this VCR. For details, refer to the instruction manual of the PCM digital audio processor.

Caution

To avoid damaging the speakers due to a wide dynamic range of a Hi-Fi recorded tape/disc, turn down the volume of the TV before playing back a Hi-Fi recorded tape/disc.





Simulcast Recording

You can record a TV programme and the sound from other equipment such as an FM tuner, simultaneously. The audio signals from the TV receiver are recorded on the normal audio track and those from the connected equipment on the Hi-Fi track.

Before you begin

- Connect your audio equipment to the EURO-AV (LINE 1) connector or the LINE IN 2 AUDIO jacks.
  The EURO-AV (LINE 3) (EURO-AV (LINE 3) PAY-TV DECODER for the SLV-825VC Model) connector cannot be used for a simulcast.
- Press INPUT SELECT on this VCR to indicate "SIMUL" in the VCR display panel.
- Other settings are the same as "Audio Recording" on the previous page.

Selecting the audio input

1 Press MENU.
The main MENU appears.

2 Press ▲ or ▼ of the cusor keys to move the cursor (▶) to MODE SET.

3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 2]menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "PREVIOUS PAGE", then press EXE.
The MODE SET [PAGE 1] menu appears.

4 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to SIMUL AUDIO IN.

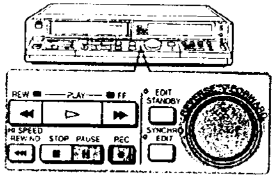
5 Move the dot using ◀ or ▶ of the cursor keys to L1 or L2 whichever your audio equipment is connected to.
Select L1 when your audio equipment is connected to the EURO-AV (LINE 1) connector, and select L2 when your audio equipment is connected to the LINE IN 2 AUDIO jacks.

6 Press EXE to store the setting and return to the original screen.

Recording

The recording procedure is the same as "Recording While Watching the TV Programme" on page 20.

Cutting out the Unwanted Scenes—
SHUTTLE EDIT

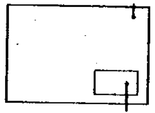


During Recording

If you wish to cut out scenes such as TV commercials, you can pause recording and play back the tape in the reverse direction until the beginning of an unwanted scene is reached. Then, record over it. This feature only works from the VCR.
During timer-activated recording, you cannot use this function.
The VCR enters the P in P mode so that you can check the pictures to be edited on the screen.

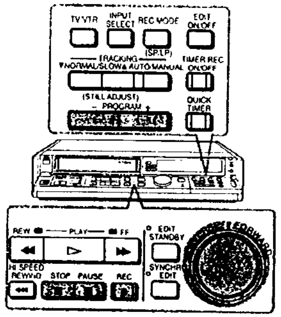
1 Press ▮▮ PAUSE during recording.
The VCR enters recording pause mode.

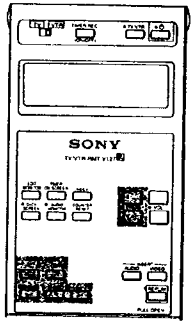
2 Turn the JOG dial and the SHUTTLE ring on the VCR counterclockwise to rewind the tape until the unwanted scene appears.
The VCR will enter P in P mode and the playback picture will appear on the subsidiary screen.

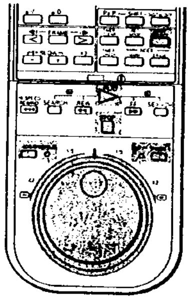


If you turn the JOG dial, you can select the playback speed by how fast you turn it, and if you turn the SHUTTLE ring, you can select the playback speed by how far you turn it .
When you release the dial or ring, the VCR enters recording pause mode and the subsidiary screen disappears from the TV screen.

3 Press ▮▮ PAUSE when a wanted scene appears on the screen.
Recording starts.







Note
The picture may be distorted a moment at the cut-out point (recording end point).

During Playback

You can re-record onto an unwanted portion of a pre-recorded cassette.
Use the JOG dial and the SHUTTLE ring on the VCR or on the remote control.

1 Press ▮▮ PAUSE at the end of the unwanted scene during playback.
The VCR enters playback pause mode.

2 Turn the dial or ring until the beginning of the unwanted scene appears on the screen.
If you turn the JOG dial, you can select the playback speed by how fast you turn it, and if you turn the SHUTTLE ring, you can select the playback speed by how far you turn it .
When you release the ring, the VCR enters playback pause mode.
You can also use the SHUTTLE EDIT buttons on the remote control to find the scene.

3 Press ●REC on the VCR or ●RECs on the remote control.
The VCR enters recording pause mode.

4 Select a new programme for re-recording.
Press PROG +/– on the flap of the remote control or PROGRAM +/– on the inside surface of the upper drop-down panel of the VCR to select the programme position.
You can also use the jog dial to select the programme position. To use this, press the PROG function button to light the indicator beside the button. Turn the jog dail clockwise for higher numbered programme positions or couterclockwise for lower numbered programme positions.
The programme number will change in the VCR display panel and on the TV screen.

5 Press ▮▮ PAUSE when the scene to be recorded begins to appear on the screen.
Recording begins.

To stop recording, press ■ STOP.

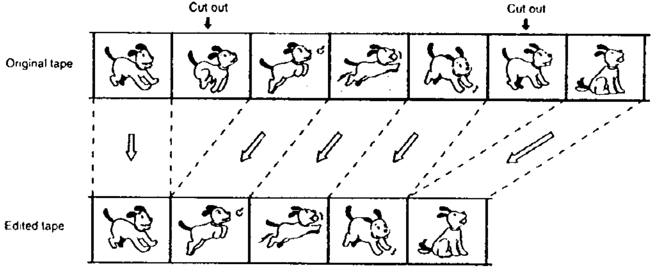
Overview of the Editing Functions

Using a second VCR, you can record programmes from one VCR to the other.
The following are the tape editing functions available on the VCR. You can perform these editings using the synchronized editing function or manually (not using the synchronized editing). In this section, the editing using the synchronized editing function will be mainly explained.

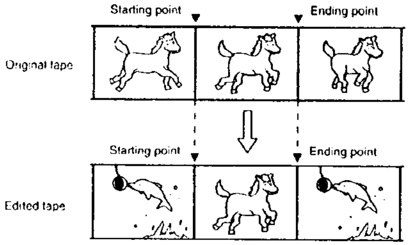
- **To make a copy of a tape.**
  — See "Tape Dubbing" on page 53.

Original tape
Copy of tape

- **To edit out unwanted scenes using the synchronized editing function (Synchronized Assemble Editing)**
  You can use the synchronized editing function to perform assemble editing and insert editing if your other VCR has a control L connector. Using this function controls both the playback VCR and the recording VCR simultaneously.
  — See "Synchronized Editing" on page 56.


Cut out
Cut out
Original tape
Edited tape

- **To insert a new picture and/or sound onto a previously recorded tape**
  — See "Insert Editing" on page 61.


Starting point
Ending point
Original tape
Starting point
Ending point
Edited tape

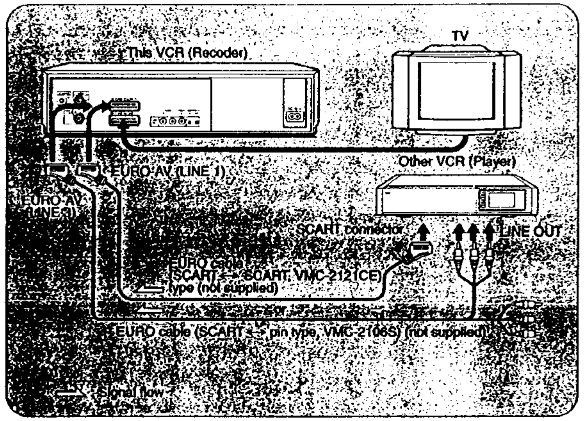
Tape Dubbing

Editing from the Other VCR

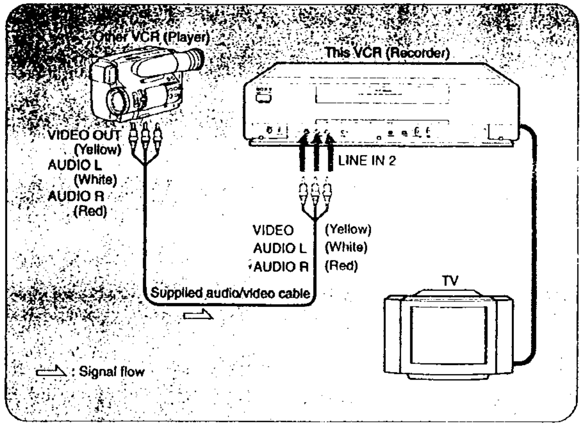
Here's how to edit from the other VCR (such as an 8mm video camera recorder or a VHS-format VCR for playback) when using this VCR for recording.
You can use the video/audio jacks on the front panel, or the 21-pin EURO-AV connector on the rear panel to perform this operation.

Connections

When using the 21-pin EURO-AV connector

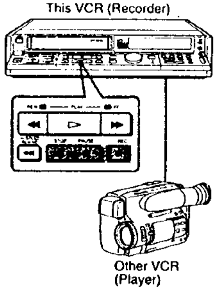

This VCR (Recoder)
TV
EURO-AV (LINE 1)
EURO-AV (LINE 3)
Other VCR (Player)
SCART connector
LINE OUT
EURO cable (SCART ⟷ SCART, VMC-2121CE) type (not supplied)
EURO cable (SCART ⟷ pin type, VMC-2106S) (not supplied)
Signal flow

When using the front panel video/audio jacks


Other VCR (Player)
This VCR (Recorder)
VIDEO OUT (Yellow)
AUDIO L (White)
AUDIO R (Red)
LINE IN 2
VIDEO (Yellow)
AUDIO L (White)
AUDIO R (Red)
Supplied audio/video cable
TV
: Signal flow

Notes

- If the other VCR is a monaural type, connect the white plug to LINE IN 2 AUDIO L and leave the red plug unconnected. This enables the sound to be separated into the right and left channels. If the other VCR is a stereo type, make connections with both the red and white plugs.
- Press INPUT SELECT on this VCR to indicate LINE L1, LINE L2 or LINE L3 in the VCR display panel to match the jack to which you have connected the other VCR.



Before you begin

- Select the tape speed (SP or LP) with REC MODE.
- Press the INPUT SELECT button to select LINE IN 1 or LINE IN 2.
  (When connected to the rear panel, select LINE IN 1. When connected to the front panel, select LINE IN 2).
  L1 or L2 appears in the VCR display panel.
- If your playback VCR has an editing function, select it to reduce static and improve reception.
- Adjust the REC LEVEL control (see "Audio Recording" on page 48).

Operation

1 Insert a blank cassette into this VCR (recorder).

2 Turn on the other VCR (player) and insert a source cassette.

3 Locate the playback starting point and select the playback pause mode on the other VCR (player).

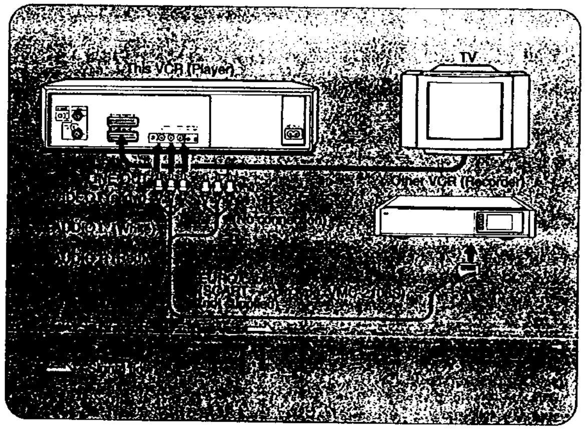
4 Locate the recording starting point and select the recording pause mode on this VCR (recorder).

5 Press ❚❚PAUSE on both VCRs.
For best result, press ❚❚PAUSE on the other VCR (player) just before pressing ❚❚PAUSE on this VCR (recorder).
When you've finished editing, press ■ STOP on both VCRs.

Editing onto the Other VCR

Here's how to use this VCR as the playback VCR and the other VCR as the recording VCR.

Connections



Before you begin

- Press the EDIT button so that the EDIT indicator lights up in the VCR display panel.
  If your recording VCR has an editing function, it should also be selected to improve reception.
- Press AUDIO MONITOR on the remote control to select the sound to be recorded.

Operation

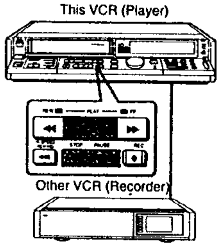
1 Turn on the other VCR (recorder) and insert a blank cassette.

2 Insert a source cassette into this VCR (player).

3 Locate the playback start point and select the playback pause mode on this VCR (player).

4 Locate the recording start point and select the recording pause mode on the other VCR (recorder).

5 Press ❚❚PAUSE on both VCRs.
For best results, press ❚❚PAUSE on this VCR (player) just before pressing ❚❚PAUSE on the other VCR (recorder).
When you've finished editing, press ■STOP on both VCRs.



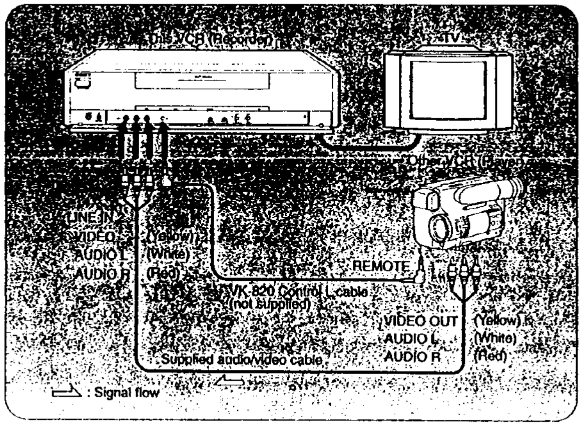
Notes
- If your recording VCR is a monaural type, make connections using the VCM-910MS/920MS cable (not supplied).
- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCR simultaneously. Doing so may cause a humming noise.

Synchronized Editing

If your other VCR has a control L connector, and/or CONTROL S IN connector, you can take advantage of a feature called "Synchronized Editing" that controls both VCRs (recording VCR and playback VCR), and releases the pause when the SYNCHRO EDIT button is pressed. To use this function, you must connect the control cable in addition to the connections of the audio and video cables. There are two types of control cables: control L (LANC or REMOTE) cable or control S cable. Which cable you need to use depends on the connectors that your other VCR has.

Connecting Video Equipment with the LANC connector

When using the front panel jacks


This VCR (Recorder)
TV
Other VCR (Player)
LINE IN 2
VIDEO
AUDIO L
AUDIO R
(Yellow)
(White)
(Red)
REMOTE
VK-820 Control L cable
(not supplied)
VIDEO OUT
AUDIO L
AUDIO R
(Yellow)
(White)
(Red)
Supplied audio/video cable
: Signal flow

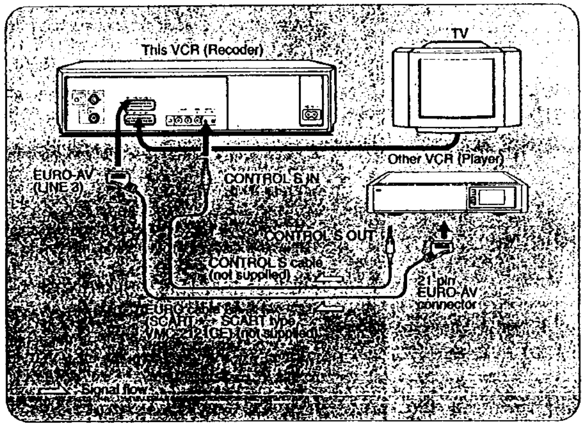
Important
After you have made the connections, make sure you set the LANC mode (see page 58).

About the ⓛ (LANC)
LANC stands for Local Application Control System.
The LANC connector is used for controlling the tape transport of video equipment and peripherals connected to it.
This connector has the same function as the connectors indicated as CONTROL L or REMOTE.

Notes

- When connecting the VCRs, do not connect both LINE IN and LINE OUT jacks on your VCRs simultaneously. Doing so may cause a humming noise.
- When the REMOTE connector of the other VCR is a stereo mini-mini plug, use the VK-820 control L cable (not supplied). If it is a 5-pin DIN connector, use the VK-810 control L cable (not supplied).
- If your playback VCR is a monaural type, connect the white plug to LINE IN 2 AUDIO L on this VCR. This lets you record the sound of the playback VCR on both channels of this VCR.
- If another VCR has both the LANC connector and the CONTROL S connector, use the LANC connector. Do not make the LANC and CONTROL S connections simultaneously.

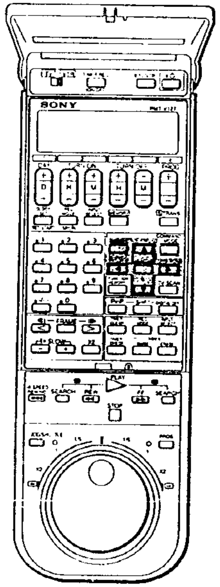
Connecting Video Equipment with the CONTROL S connector


This VCR (Recoder)
TV
Other VCR (Player)
EURO-AV (LINE 3)
CONTROL S IN
CONTROL S OUT
CONTROL S cable (not supplied)
21-pin EURO-AV connector
EURO cable (SCART ↔ SCART type VMC-2121(GE) (not supplied)
Signal flow

When using the CONTROL S cable

Set the commander mode of this VCR and the other video equipment to the same position.
If the other video equipment has the synchronized function, use the SYNCHRO EDIT button on other equipment.
Comparing to the synchronized editing using the LANC connector, the synchronized editing using the CONTROL S connector only enables you to pause both VCRs and release the pause mode of both VCRs.

Note
When connecting the other VCR to LINE IN 2 on the front, use the supplied video/audio connecting cable. If the other VCR is a monaural type, connect to LINE IN 2 AUDIO L using the white plugs. This enables the sound to be separated into the right and left channels. Leave the red plugs unconnected.



Setting the LANC MODE and SHUTTLE MODE

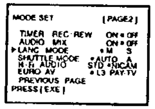
After you have made the control L cable connection on page 56, you must choose the LANC MODE and SHUTTLE MODE setting. The LANC MODE setting decides which VCR controls which. Use the MODE SET [PAGE 2] for this setting.
Here's how to do this setting.

1 Press MENU to display the main MENU.

2 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "MODE SET".

3 Press EXE.
The MODE SET menu appears.
If the MODE SET [PAGE 1] menu is displayed on your TV screen, press ▲ or ▼ of the cursor keys to move the cursor (▶) to "NEXT PAGE", then press EXE.

4 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "LANC MODE."



```
MODE SET                    [PAGE2]

  TIMER  REC·REW        ON •OFF
  AUDIO  MIX            ON •OFF
▶LANC  MODE            •M    S
  SHUTTLE MODE       •AUTO   A
  Hi-Fi AUDIO        STD •NICAM
  EURO AV            •L3 PAY-TV
  PREVIOUS  PAGE
PRESS [EXE]
```

5 Select "M" or "S" using ◀ or ▶ of the cursor keys.
When you want to control the other VCR from this VCR, select "M."
When you want to control this VCR from the other VCR, select "S."

6 Press ▲ or ▼ of the cursor keys to move the cursor (▶) to "SHUTTLE MODE."

7 Select "AUTO" or "A" using ◀ or ▶ of the cursor keys.
Normally set to "AUTO." The VCR detects automatically whether the other VCR has a reverse slow-motion playback function or not. If the other VCR doesn't perform tape movement as you operated, select "A."
When you select "A", the tape will come to move only in the forward direction, and the JOG dial doesn't work (for details, see page 41).

8 Press EXE to store the setting.
The TV screen returns to the original screen.

Synchronized Assemble Editing

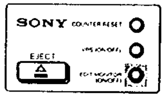
You can display both the picture of the playback VCR and recording VCR simultaneously on the TV screen. This allows you to perform editing while previewing editing scenes.

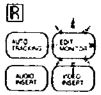
Before you begin

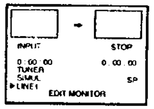
- Press the REC MODE button on the VCR or on the remote control to select the tape speed (SP or LP).
- Check the SHUTTLE MODE setting (see page 58).

1 Insert a recorded cassette into the other VCR and insert a cassette for recording into this VCR.

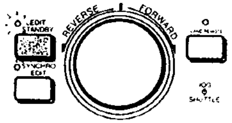
2 Press EDIT MONITOR.
The EDIT MONITOR screen appears on the TV screen.

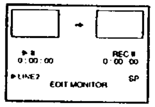

SONY
COUNTER RESET
VPS (ON/OFF)
EJECT
EDIT MONITOR (ON/OFF)


R
AUTO TRACKING
EDIT MONITOR
AUDIO INSERT
VIDEO INSERT

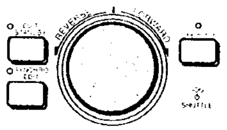

INPUT
STOP
0 : 00 : 00
0 : 00 : 00
TUNER
SIMUL
SP
▶LINE1
EDIT MONITOR

3 Press EDIT STANDBY.
This VCR (recorder) will enter recording pause mode, the other VCR (player) enters playback pause mode. The EDIT STANDBY indicator on the front panel of this VCR lights up.
The LINE IN 2 input is automatically selected. If other VCR (player) is connected to the rear panel, press the INPUT SELECT button to select LINE IN 1 or LINE 3.
The LANC MODE setting is automatically set to "M."

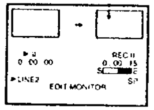

EDIT STANDBY
SYNCHRO EDIT
REVERSE
FORWARD
JOG
SHUTTLE


▶ ॥
0 : 00 : 00
REC ॥
0 : 00 : 00
▶LINE2
EDIT MONITOR
SP

4 Locate the starting point where you want to begin recording, using the JOG dial and the SHUTTLE ring.


REVERSE
FORWARD
SHUTTLE

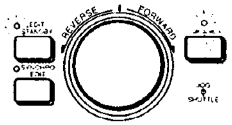
Picture of the recorder


▶ ॥
0 : 00 : 00
REC ॥
0 : 00 : 15
S
E
▶LINE2
EDIT MONITOR
SP

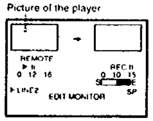
(Continued)

☞ Now you should determine the starting point where the player begins playback.

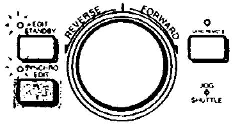
5 Press LANC REMOTE.
The LANC REMOTE indicator lights up and locate the playback starting point, using the JOG dial and the SHUTTLE ring.


EDIT STANDBY
REVERSE
FORWARD
SYNCHRO EDIT
JOG
SHUTTLE

Picture of the player

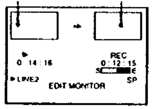

REMOTE
▶II
0 12 16
REC II
0 10 15
SP
LINE2
EDIT MONITOR

6 Press SYNCHRO EDIT.
The SYNCHRO EDIT indicator lights up.
The pause mode of the playback VCR and the recording VCR are released, and the recording starts.

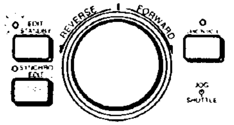

EDIT STANDBY
REVERSE
FORWARD
SYNCHRO EDIT
JOG
SHUTTLE

Picture of the player's starting point (freezed)

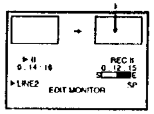
Picture to be recorded on this VTR


▶
0 14 16
REC
0 12 15
SP
LINE2
EDIT MONITOR

7 Press SYNCHRO EDIT at the scene where you want to stop recording.
The playback VCR and recording VCR enter pause mode.


EDIT STANDBY
REVERSE
FORWARD
SYNCHRO EDIT
JOG
SHUTTLE

Picture of the player's ending point (freezed)


▶II
0 14 16
REC II
0 12 15
SP
LINE2
EDIT MONITOR

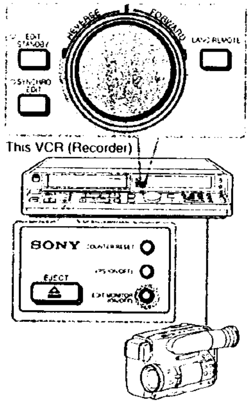
To edit another scene
Repeat steps 4 through 7.

To stop editing
Press EDIT STANDBY.
Both the playback VCR and the recording VCR stop.

"Advanced Synchro Edit"
When you connect this VCR with a video camera recorder (camcorder) or another VCR which responds to the advanced synchro edit function (such as CCD-V800E, CCD-F550E, and CCD-TR805E, etc), you can take advantage of this precise editing function.

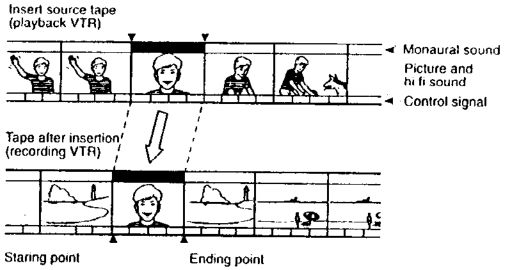
Convenient use of the LANC REMOTE button
If you connect your video camera recorder (camcorder) to your TV using an audio/video cable and to this VCR using the LANC cable, you can control the tape operation of your video camera recorder (camcorder) from this VCR.
If your video camera recorder (camcorder) has a reverse playback function such as -slow playback, -X2 speed playback and -X1 playback, you can control the reverse operation using the JOG dial and the SHUTTLE ring (for details, see page 41).

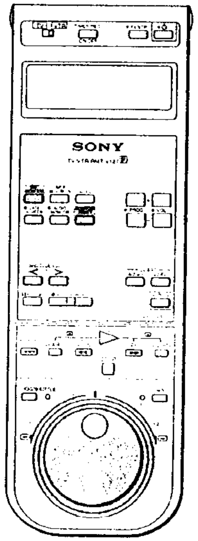
Insert Editing


EDIT STANDBY
REVERSE
FORWARD
LANC REMOTE
SYNCHRO EDIT
This VCR (Recorder)
SONY
EJECT
Other VCR
(Player)

Inserting a New Picture and/or Sound

You can easily insert a new picture and/or sound onto a pre-recorded tape. This editing is useful to replace an unnecessary scene (or sound) with another scene (or sound).


Insert source tape
(playback VTR)
Monaural sound
Picture and
hi fi sound
Control signal
Tape after insertion
(recording VTR)
Starting point
Ending point



Before You Begin

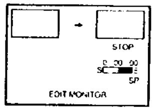
- For connection, see page 56 or 57.(The CONTROL L or CONTROL S connection is not necessary).
- Select the insert source from the equipment connected to EURO-AV (LINE 1), LINE 2 and EURO-AV (LINE 3).

Operation

1 Insert a source tape into the playback VCR. Insert a tape for recording into this VCR.

2 Press EDIT ON/OFF.
If the playback VCR is equipped with the EDIT switch, set it to ON.

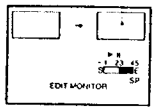
3 Press EDIT MONITOR on the VCR or on the remote control.


STOP
0 00 00
SP
EDIT MONITOR

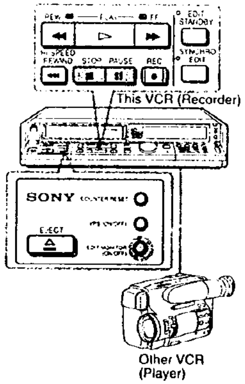
4 On this VCR, locate the ending point and press COUNTER RESET.
The counter will show "0H00M00S" and the ending point will be memorized.

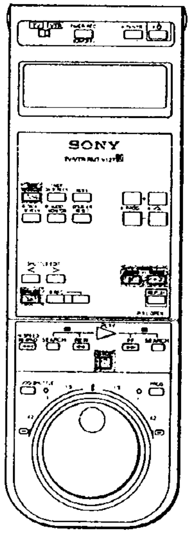
5 On this VCR, locate the starting point and set the VCR to the playback pause mode. JOG/SHUTTLE or SHUTTLE EDIT are useful for this operation.
When you use the JOG/SHUTTLE on the remote control, press the JOG/SHUTTLE button to light the indicator beside the button first.

Picture on this VCR


▶II
23 45
SP
EDIT MONITOR

(Continued)


This VCR (Recorder)
SONY
EJECT
Other VCR
(Player)

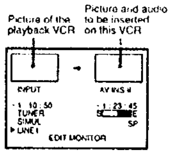


Note
The MIC jack of this VCR is adaptable to the use of a monaural mini plug. If you connect a stereo microphone, the audio will be recorded in monaural.

6 Press AUDIO/VIDEO INSERT.

When the VIDEO INSERT button is pressed
The picture and the sound on the Hi-Fi audio track will be inserted. (The sound on the normal audio track will be retained.)

When the AUDIO INSERT button is pressed
The sound on the normal audio track will be inserted. (The picture and the sound on the Hi-Fi audio track will be retained.)


Picture of the playback VCR
Picture and audio to be inserted on this VCR
INPUT
AV INS
1 10 : 50
TUNER
SIMUL
▶ LINE 1
1 : 23 : 45
S E
SP
EDIT MONITOR

When the VIDEO and AUDIO INSERT buttons are pressed (AV INSERT)
The picture, sound on the Hi-Fi audio track, and the sound on the normal audio track will be inserted.

The indicator corresponding to the button pressed will light up.
At the ending point (0H00M00S), the insertion will stop automatically.

7 On the playback VCR, locate the starting point where you want to start the insertion and set the VCR to the playback pause mode.

8 Press **II** PAUSE on both VCRs to start the insertion.
At the ending point (0H00M00S), the insertion will stop automatically.

To stop the insertion temporarily

Press **II** PAUSE.

To stop on-going insertion

Press ■ STOP.

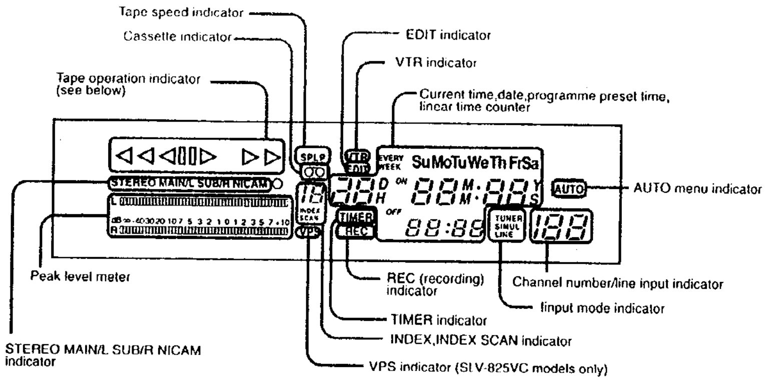
To turn off the EDIT MONITOR display

Press EDIT MONITOR.

When the sound from the microphone is inserted

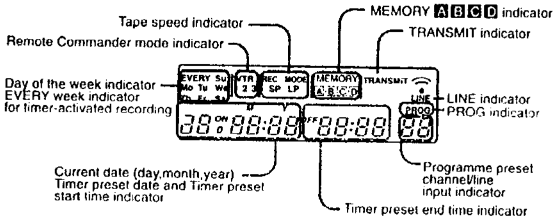
When the microphone is connected to the MIC jack, the sound from the microphone is automatically selected and it is recorded on the normal track.
To record the sound from the microphone, select AUDIO or AV INSERT.

VCR Display Panel


Tape speed indicator
Cassette indicator
Tape operation indicator (see below)
EDIT indicator
VTR indicator
Current time,date,programme preset time, linear time counter
AUTO menu indicator
STEREO MAIN/L SUB/R NICAM
EVERY WEEK
SuMoTuWeThFrSa
SP LP
VTR
EDIT
AUTO
TIMER
REC
TUNER SIMUL LINE
INDEX SCAN
VPS
Peak level meter
REC (recording) indicator
Channel number/line input indicator
Input mode indicator
TIMER indicator
INDEX,INDEX SCAN indicator
VPS indicator (SLV-825VC models only)
STEREO MAIN/L SUB/R NICAM indicator

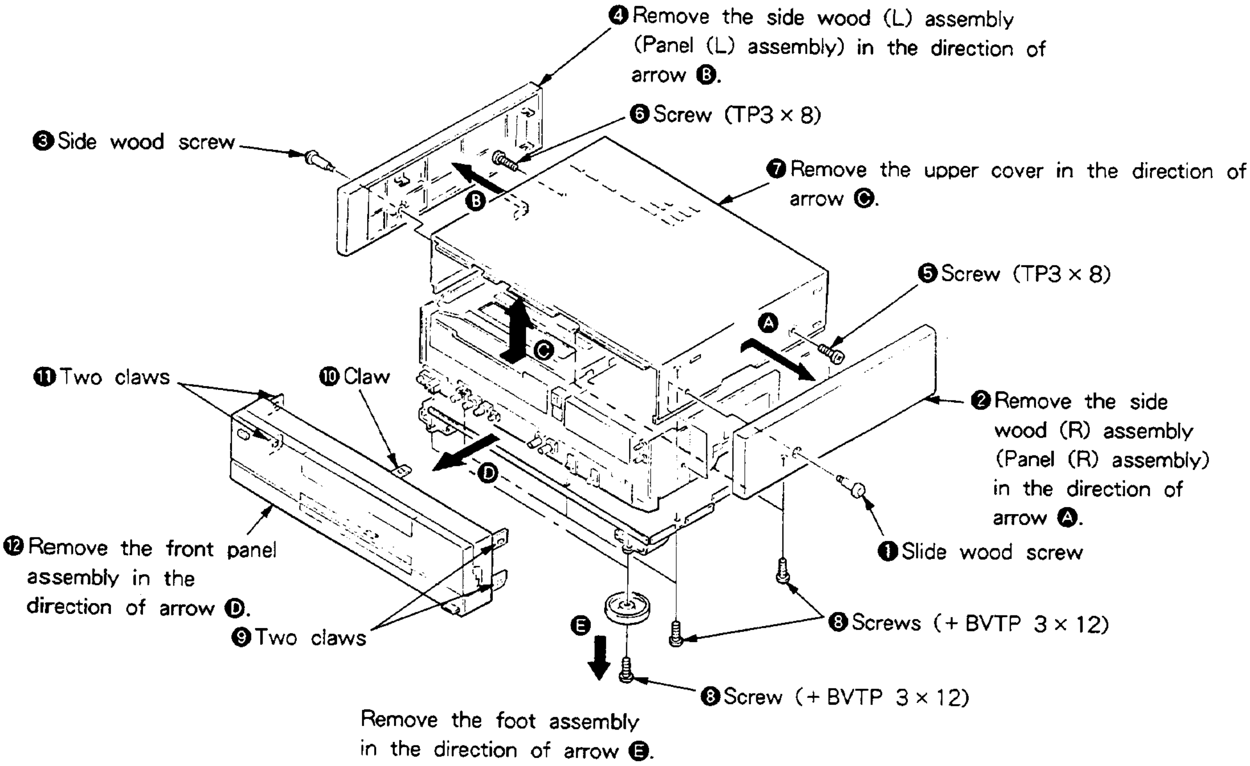
REC	Recording	◀|	Slow playback, (reverse)	▶ ▶▶	Picture search, locked picture search (forward)
REC+II	Recording pause	II ⋮ ▶	Play pause (forward)	◀◀ ▶	Picture search, locked picture search (reverse)
▶	Playback, double speed playback (forward)	◀ ⋯ II	Play pause (reverse)	◀◀▶ AUTO	Auto play (REW-PLAY)
◀	Playback, double speed playback (reverse)	▶▶	Fast forward		
|▶	Slow playback, (forward)	◀◀	Rewind	◀◀◀	High speed rewind

Remote Display

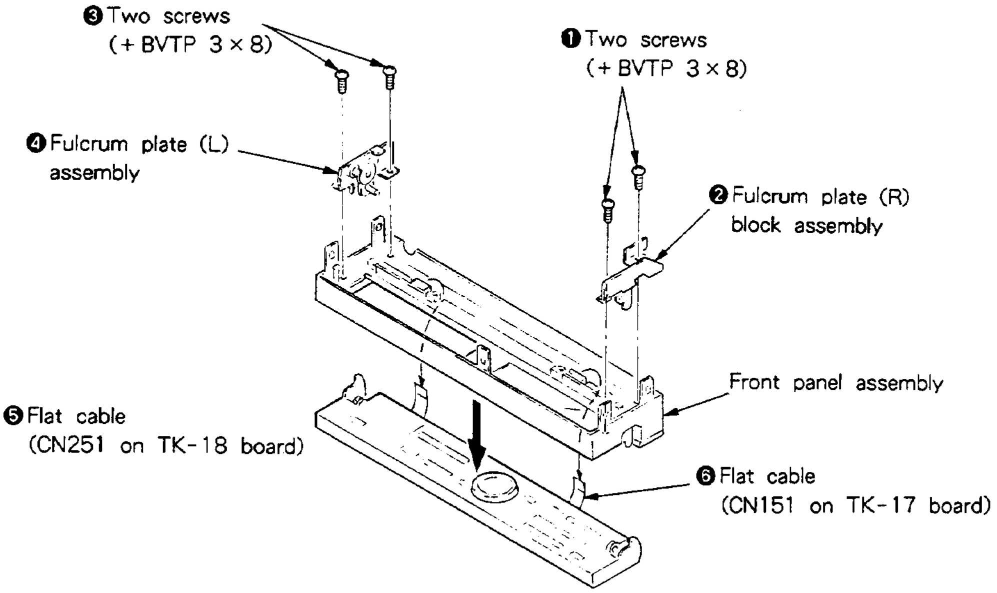

Tape speed indicator
Remote Commander mode indicator
MEMORY A B C D indicator
TRANSMIT indicator
Day of the week indicator
EVERY week indicator for timer-activated recording
EVERY Su Mo Tu We Th Fr Sa
VTR 1 2 3
REC MODE SP LP
MEMORY A B C D
TRANSMIT
LINE
PROG
LINE indicator
PROG indicator
Current date (day,month,year)
Timer preset date and Timer preset start time indicator
Programme preset channel/line input indicator
Timer preset end time indicator

SECTION 2
DISASSEMBLY

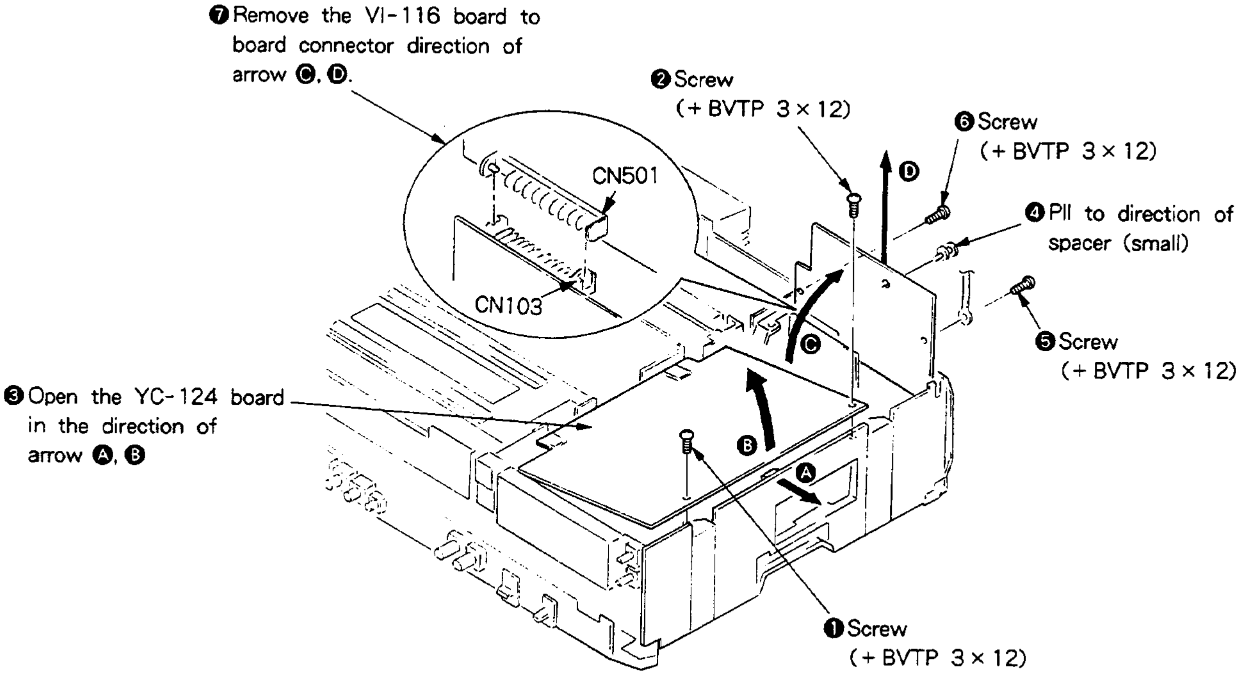
2-1. REMOVAL OF FRONT PANEL AND CABINET ASSEMBLIES


❹ Remove the side wood (L) assembly (Panel (L) assembly) in the direction of arrow Ⓑ.
❻ Screw (TP3 × 8)
❸ Side wood screw
❼ Remove the upper cover in the direction of arrow Ⓒ.
Ⓑ
❺ Screw (TP3 × 8)
Ⓐ
Ⓒ
⓫ Two claws
❿ Claw
❷ Remove the side wood (R) assembly (Panel (R) assembly) in the direction of arrow Ⓐ.
Ⓓ
⓬ Remove the front panel assembly in the direction of arrow Ⓓ.
❶ Slide wood screw
❽ Screws (+ BVTP 3 × 12)
❾ Two claws
Ⓔ
❽ Screw (+ BVTP 3 × 12)
Remove the foot assembly in the direction of arrow Ⓔ.

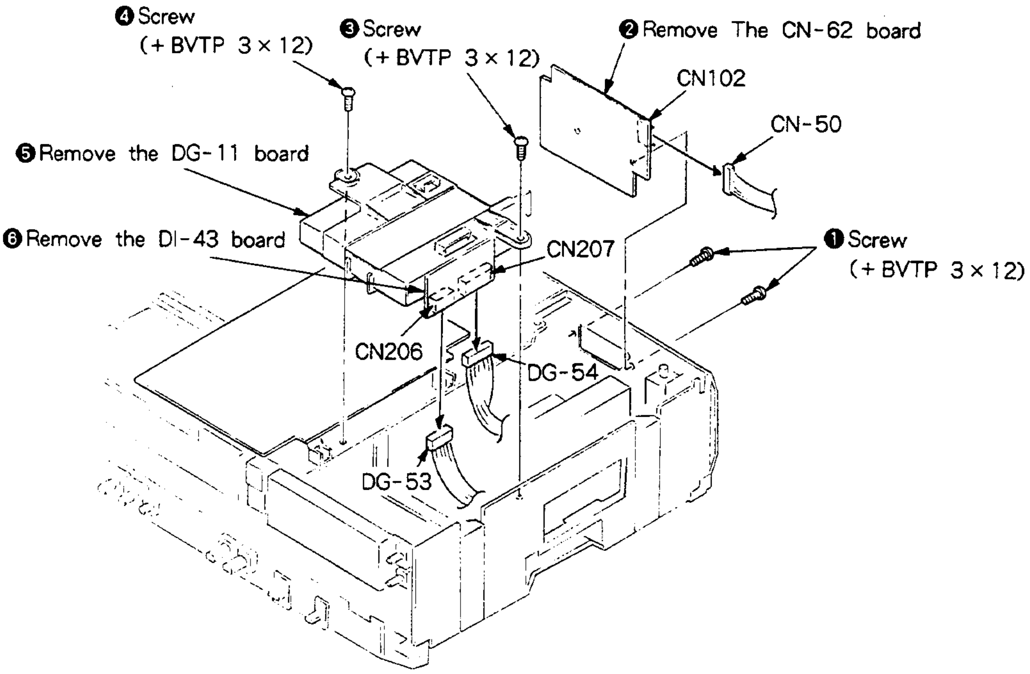
2-2. REMOVAL OF CONTROL SWITCH BLOCK


❸ Two screws (+ BVTP 3 × 8)
❶ Two screws (+ BVTP 3 × 8)
❹ Fulcrum plate (L) assembly
❷ Fulcrum plate (R) block assembly
Front panel assembly
❺ Flat cable (CN251 on TK-18 board)
❻ Flat cable (CN151 on TK-17 board)

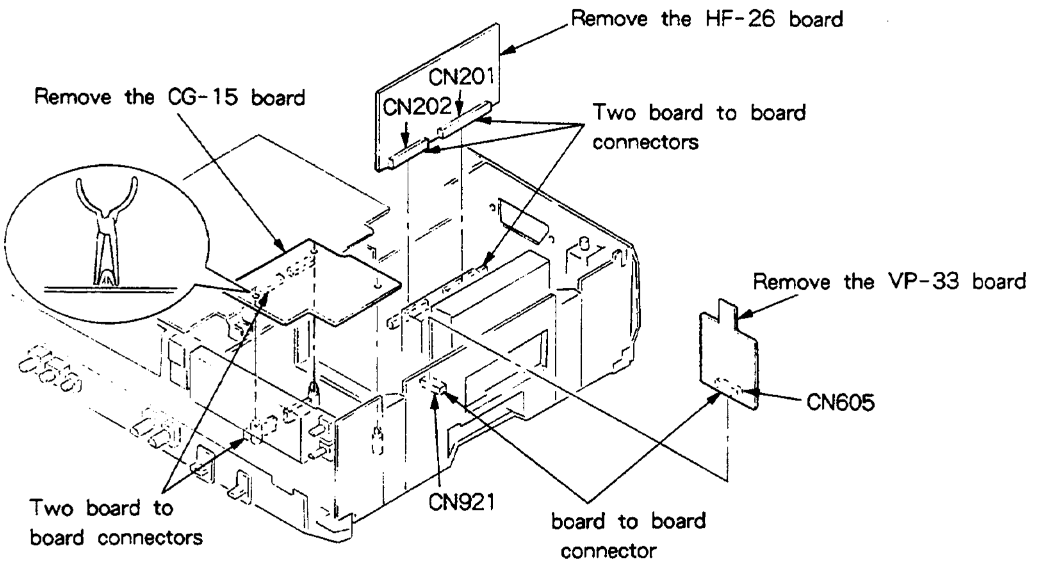
2-3. OPENING OF YC-124 BOARD AND VI-116 BOARD


❼Remove the VI-116 board to board connector direction of arrow Ⓒ, Ⓓ.
❷Screw (+BVTP 3×12)
❻Screw (+BVTP 3×12)
Ⓓ
CN501
❹Pll to direction of spacer (small)
CN103
Ⓒ
❺Screw (+BVTP 3×12)
❸Open the YC-124 board in the direction of arrow Ⓐ, Ⓑ
Ⓑ
Ⓐ
❶Screw (+BVTP 3×12)

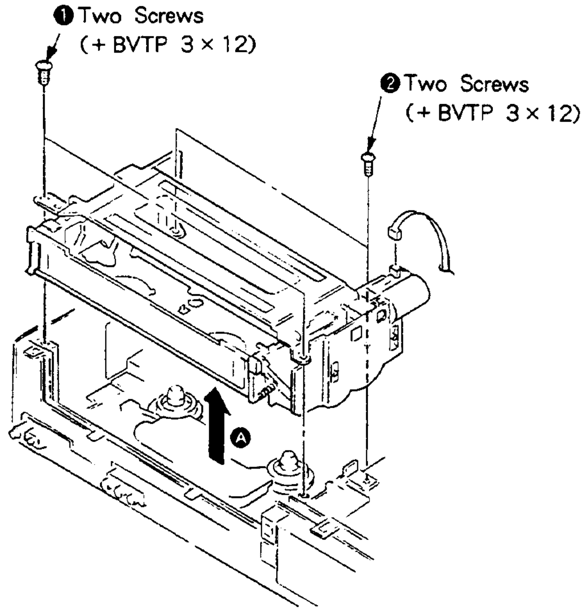
2-4. REMOVE OF DG-11, DI-43, AND CN-62 BOARD


❹Screw (+BVTP 3×12)
❸Screw (+BVTP 3×12)
❷Remove The CN-62 board
CN102
CN-50
❺Remove the DG-11 board
❻Remove the DI-43 board
CN207
❶Screw (+BVTP 3×12)
CN206
DG-54
DG-53

2-5. REMOVE OF HF-26, VP-33, CG-15 BOARD

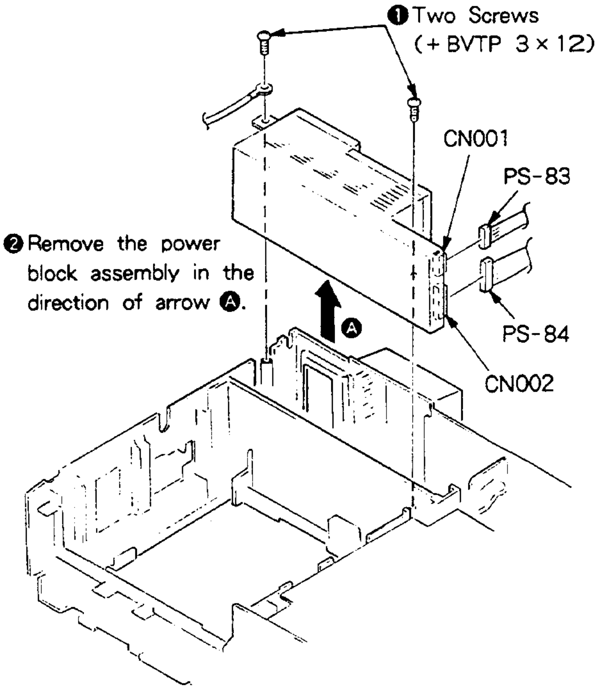

Remove the HF-26 board
Remove the CG-15 board
CN201
CN202
Two board to board connectors
Remove the VP-33 board
CN605
Two board to board connectors
CN921
board to board connector

2-6. REMOVE OF FL CASSETTE COMPARMENT ASSEMBLY


❶Two Screws
(+BVTP 3 × 12)
❷Two Screws
(+BVTP 3 × 12)
Ⓐ

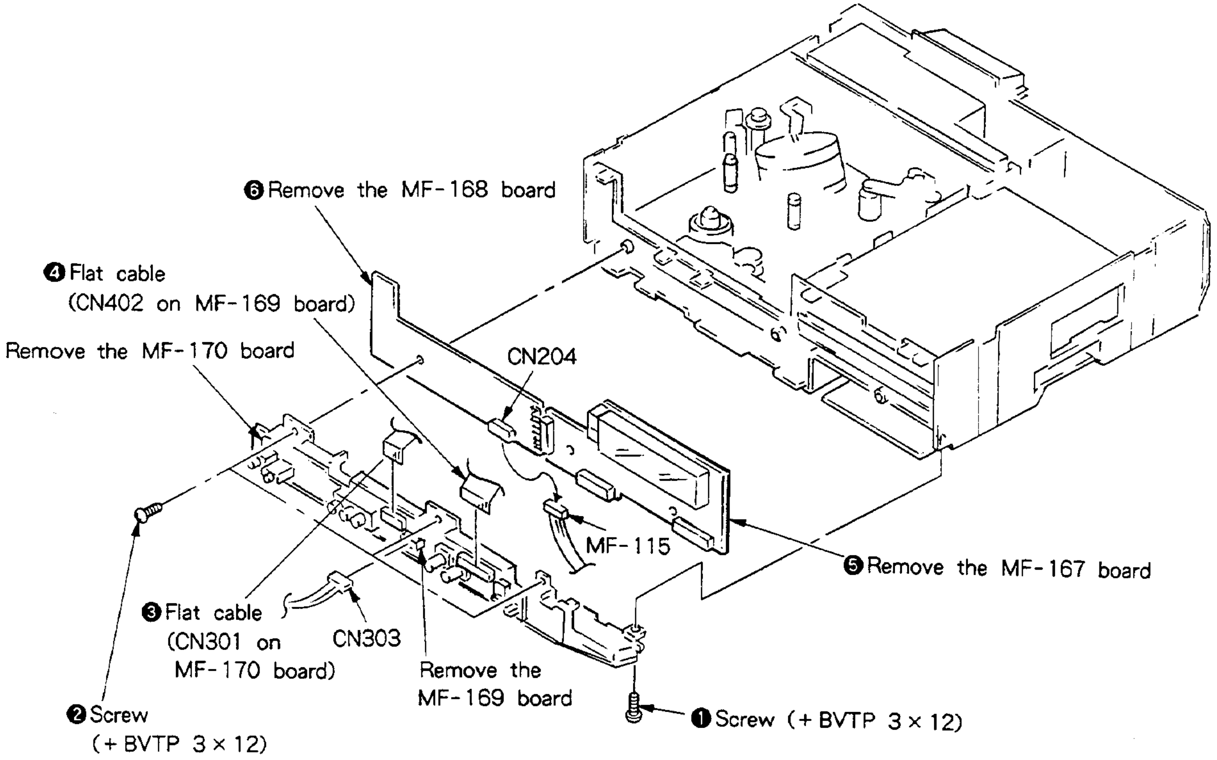
❸Remove the FL cassette comparment assembly in the direction of arrow Ⓐ.

2-7. REMOVE OF POWER BLOCK ASSEMBLY

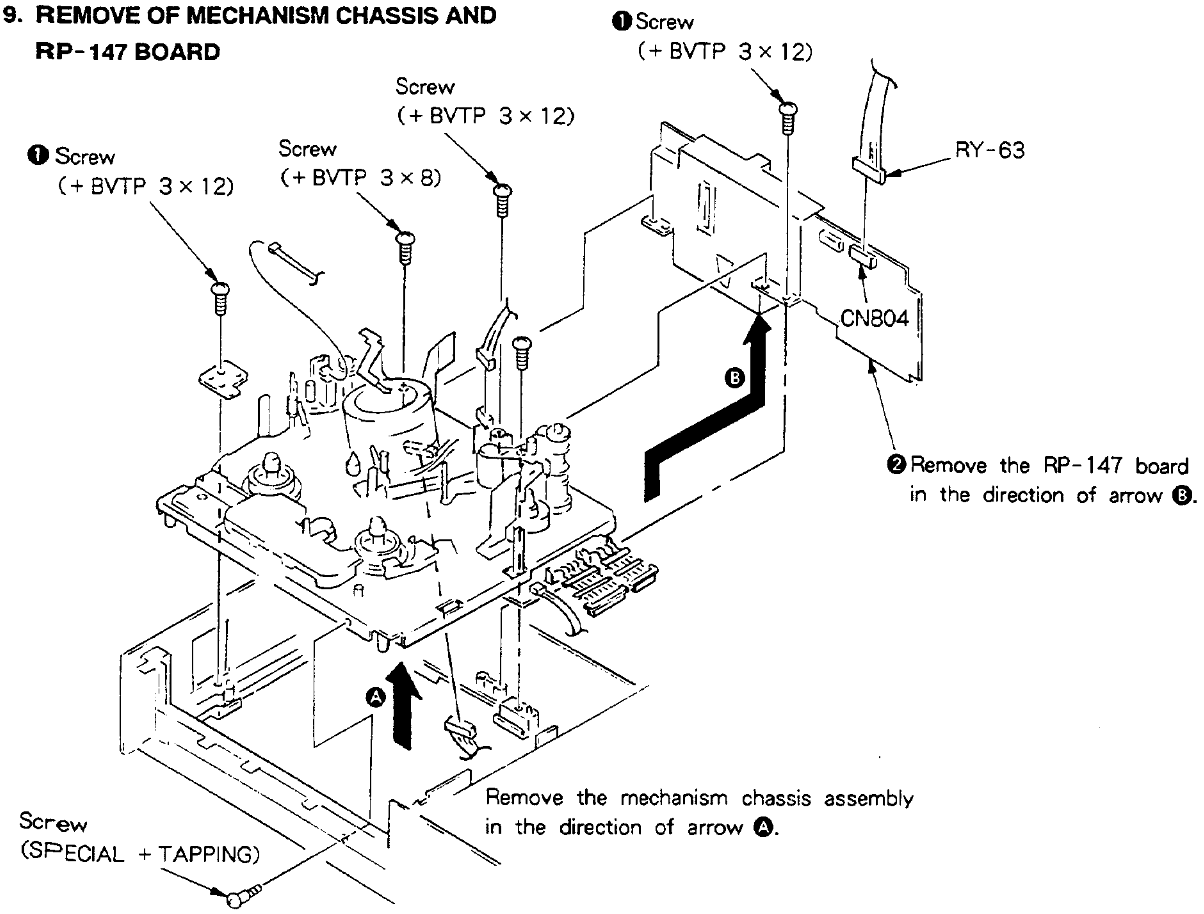

❶Two Screws
(+BVTP 3 × 12)
CN001
PS-83
PS-84
CN002
Ⓐ

❷Remove the power block assembly in the direction of arrow Ⓐ.

2-8. REMOVE OF MF-167, 168, 169, 170 BOARD

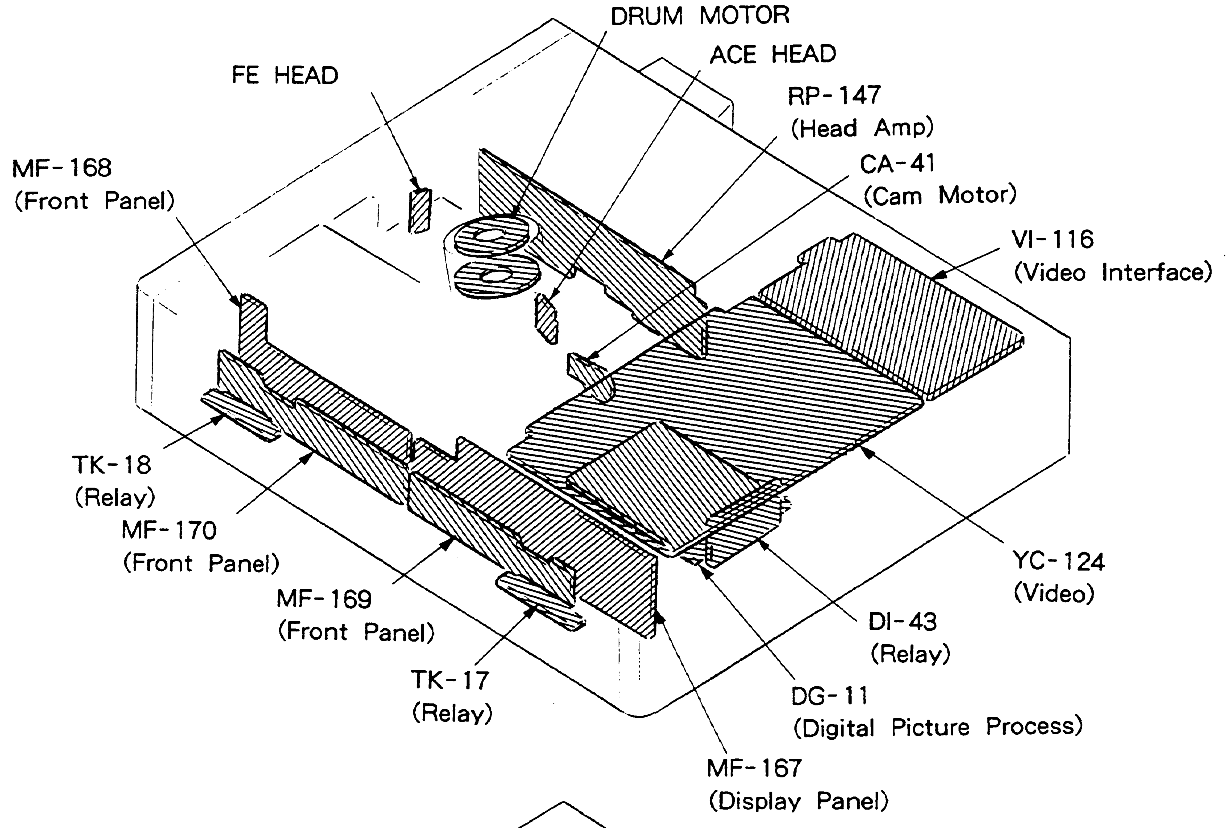

❻Remove the MF-168 board
❹Flat cable
(CN402 on MF-169 board)
Remove the MF-170 board
CN204
MF-115
❺Remove the MF-167 board
❸Flat cable
(CN301 on
MF-170 board)
CN303
Remove the
MF-169 board
❷Screw
(+ BVTP 3 × 12)
❶Screw (+ BVTP 3 × 12)

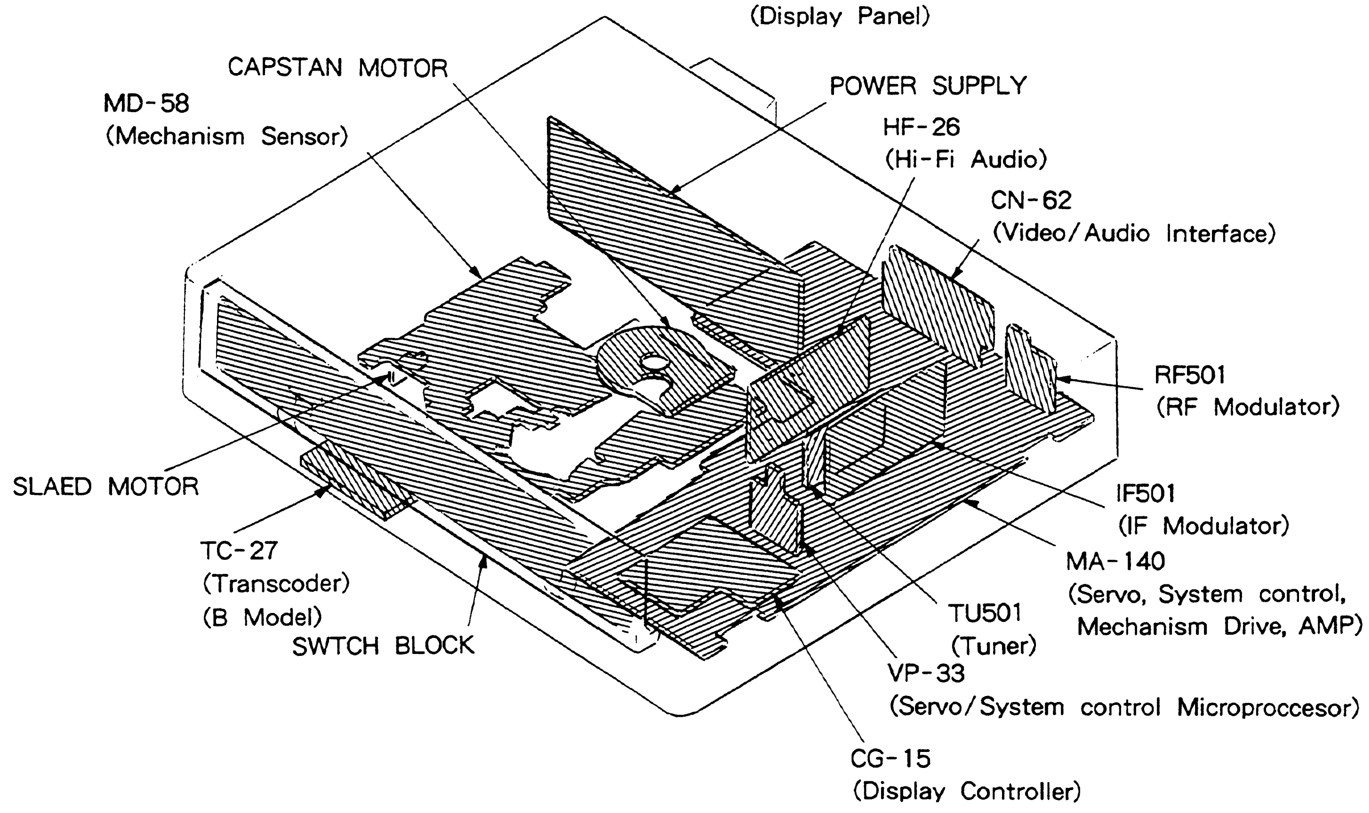
2-9. REMOVE OF MECHANISM CHASSIS AND RP-147 BOARD


❶Screw
(+ BVTP 3 × 12)
Screw
(+ BVTP 3 × 12)
❶ Screw
(+ BVTP 3 × 12)
Screw
(+ BVTP 3 × 8)
RY-63
CN804
❷Remove the RP-147 board
in the direction of arrow ❸.
Remove the mechanism chassis assembly
in the direction of arrow Ⓐ.
Screw
(SPECIAL + TAPPING)
Ⓐ
Ⓑ

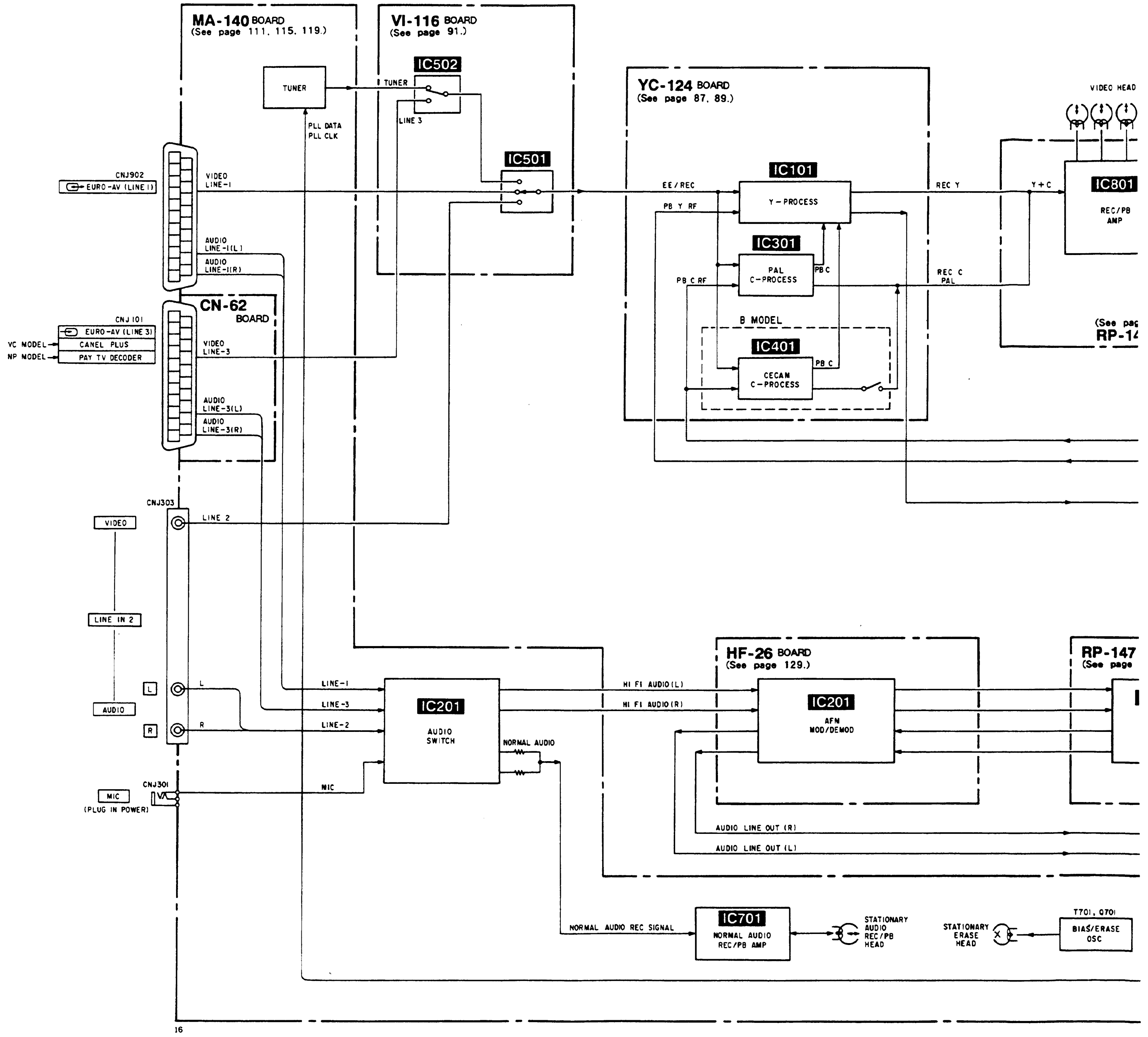
SECTION 3
DIAGRAMS

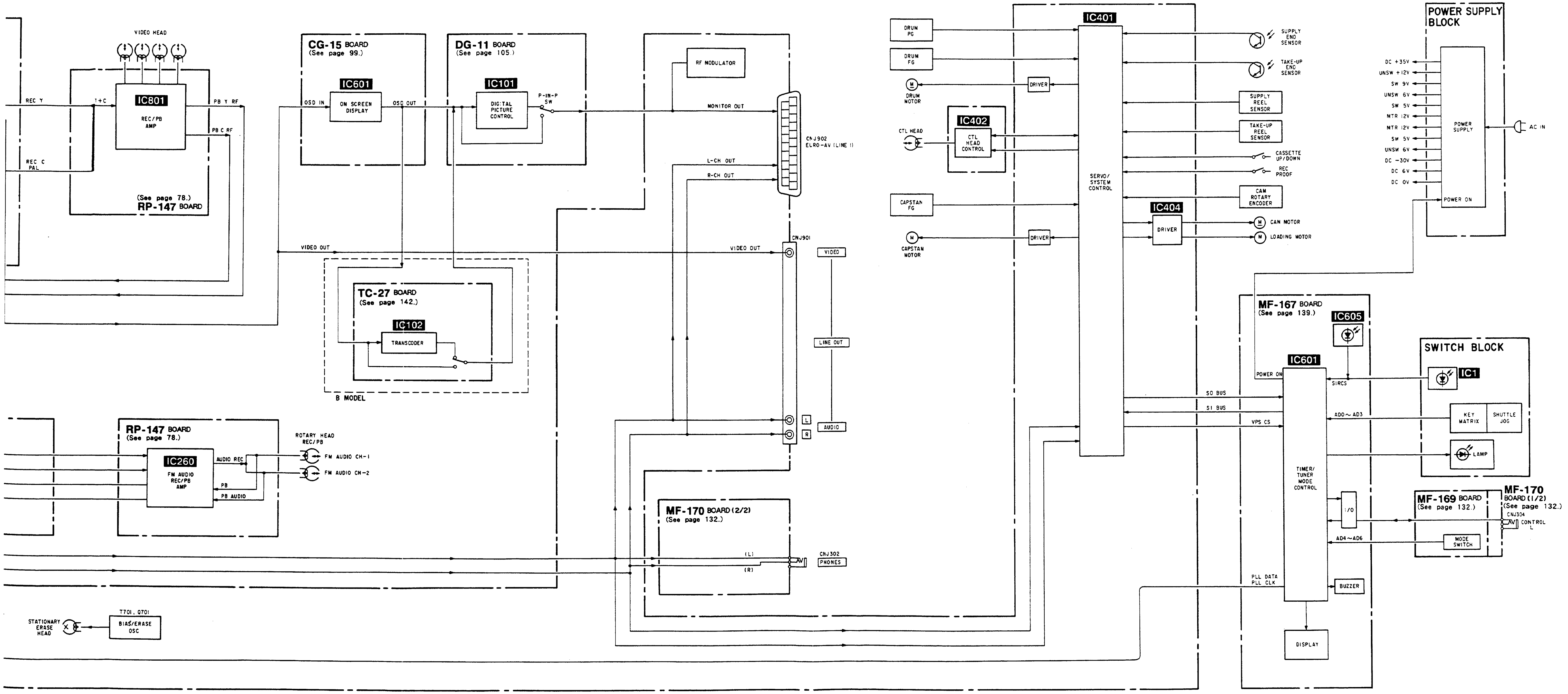
3-1. CIRCUIT BOARDS LOCATION


DRUM MOTOR
FE HEAD
ACE HEAD
RP-147
(Head Amp)
MF-168
(Front Panel)
CA-41
(Cam Motor)
VI-116
(Video Interface)
TK-18
(Relay)
MF-170
(Front Panel)
MF-169
(Front Panel)
YC-124
(Video)
DI-43
(Relay)
TK-17
(Relay)
DG-11
(Digital Picture Process)
MF-167
(Display Panel)

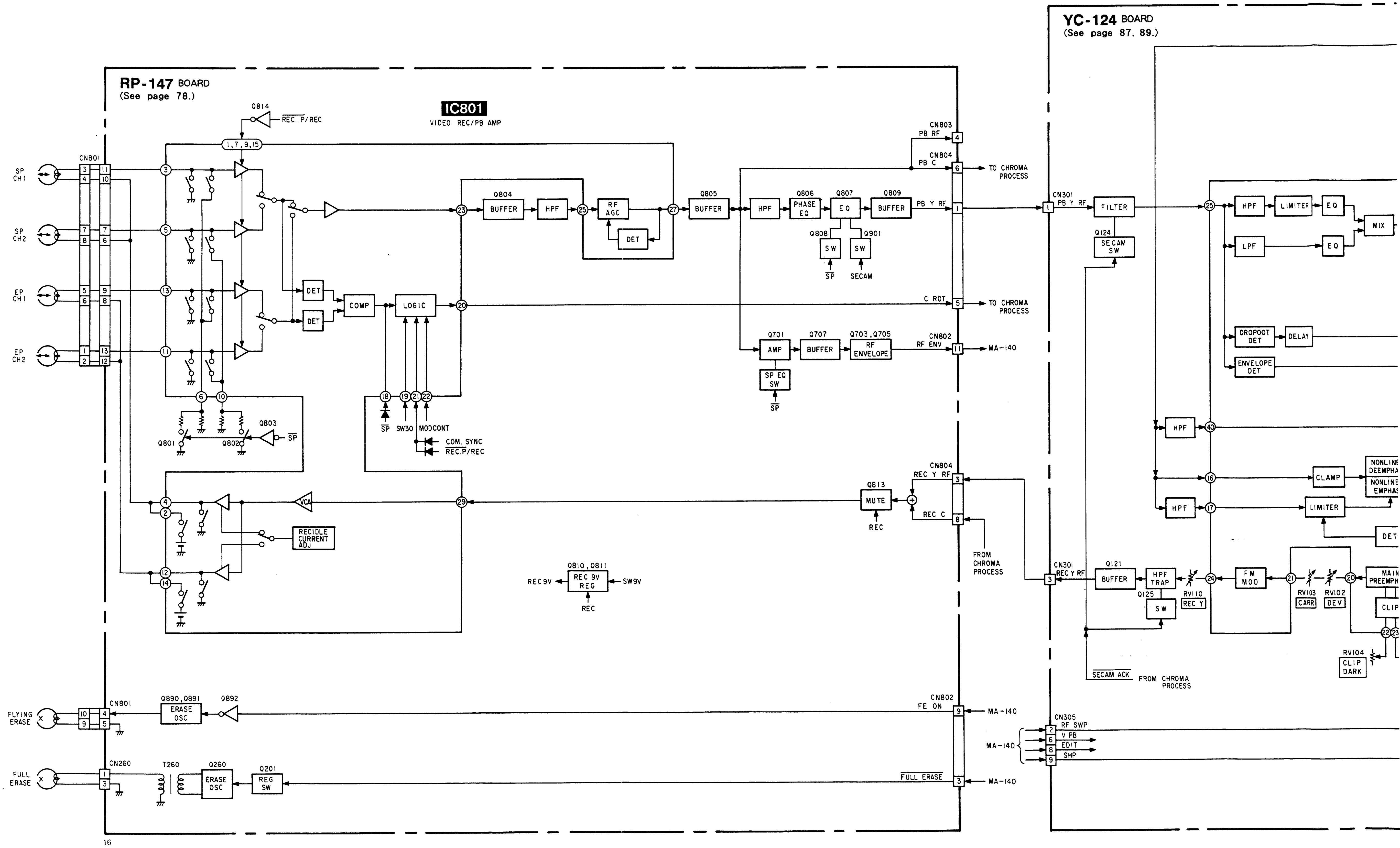

CAPSTAN MOTOR
MD-58
(Mechanism Sensor)
POWER SUPPLY
HF-26
(Hi-Fi Audio)
CN-62
(Video/Audio Interface)
RF501
(RF Modulator)
SLAED MOTOR
IF501
(IF Modulator)
TC-27
(Transcoder)
(B Model)
MA-140
(Servo, System control,
Mechanism Drive, AMP)
SWTCH BLOCK
TU501
(Tuner)
VP-33
(Servo/System control Microproccesor)
CG-15
(Display Controller)

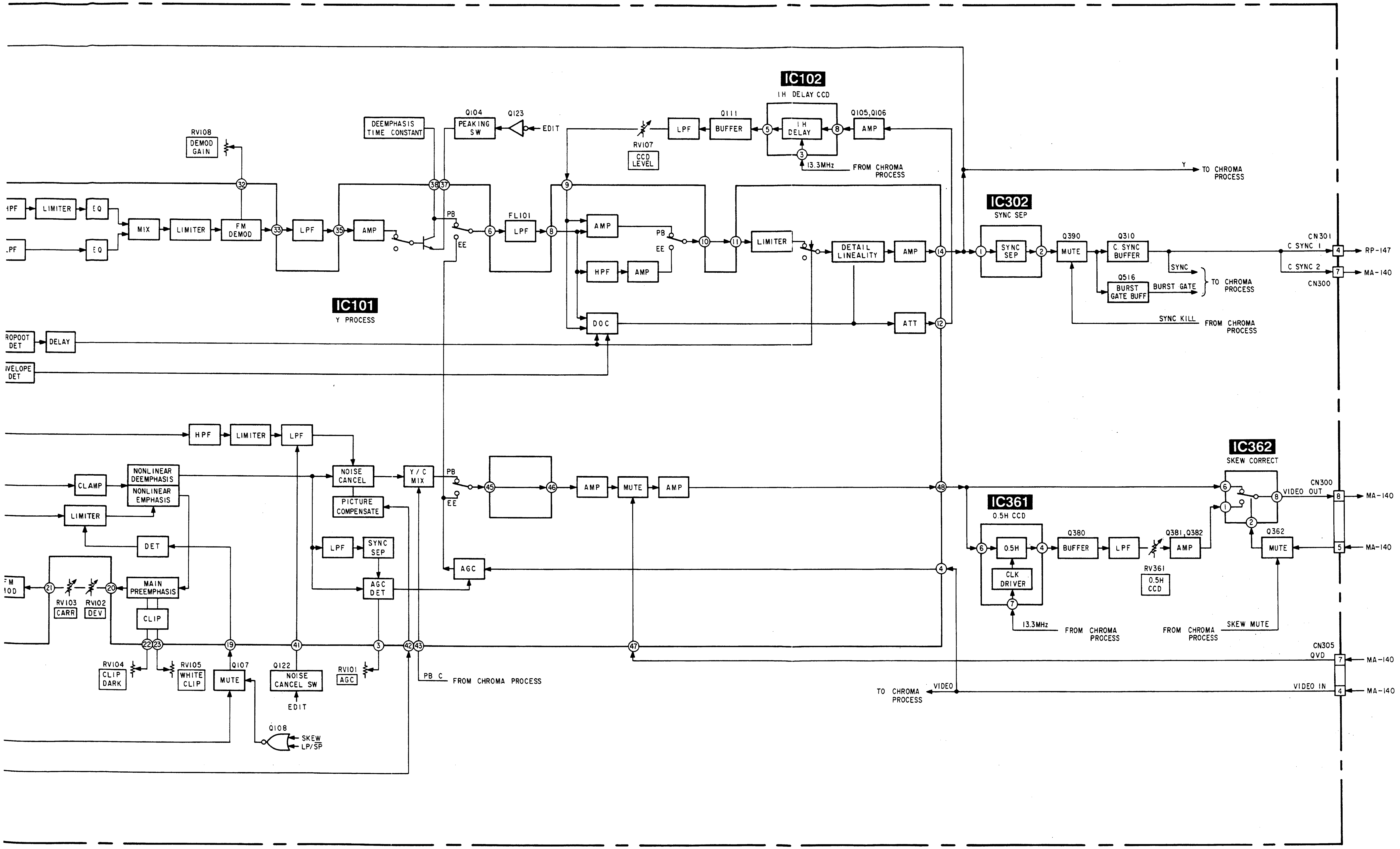
3-2. OVER ALL BLOCK DIAGRAM


MA-140 BOARD
(See page 111, 115, 119.)
VI-116 BOARD
(See page 91.)
IC502
TUNER
TUNER
LINE 3
PLL DATA
PLL CLK
IC501
CNJ902
EURO-AV (LINE 1)
VIDEO
LINE-1
AUDIO
LINE-1(L)
AUDIO
LINE-1(R)
CN-62
BOARD
CNJ101
EURO-AV (LINE 3)
VC MODEL
CANEL PLUS
NP MODEL
PAY TV DECODER
VIDEO
LINE-3
AUDIO
LINE-3(L)
AUDIO
LINE-3(R)
YC-124 BOARD
(See page 87, 89.)
IC101
EE/REC
PB Y RF
Y-PROCESS
REC Y
IC301
PAL
C-PROCESS
PB C
PB C RF
REC C
PAL
B MODEL
IC401
CECAM
C-PROCESS
PB C
VIDEO HEAD
Y+C
IC801
REC/PB
AMP
(See pag
RP-14
CNJ303
VIDEO
LINE 2
LINE IN 2
L
AUDIO
R
CNJ301
MIC
(PLUG IN POWER)
LINE-1
LINE-3
LINE-2
MIC
IC201
AUDIO
SWITCH
NORMAL AUDIO
HI FI AUDIO(L)
HI FI AUDIO(R)
HF-26 BOARD
(See page 129.)
IC201
AFM
MOD/DEMOD
RP-147
(See page
AUDIO LINE OUT (R)
AUDIO LINE OUT (L)
NORMAL AUDIO REC SIGNAL
IC701
NORMAL AUDIO
REC/PB AMP
STATIONARY
AUDIO
REC/PB
HEAD
STATIONARY
ERASE
HEAD
T701, Q701
BIAS/ERASE
OSC
16

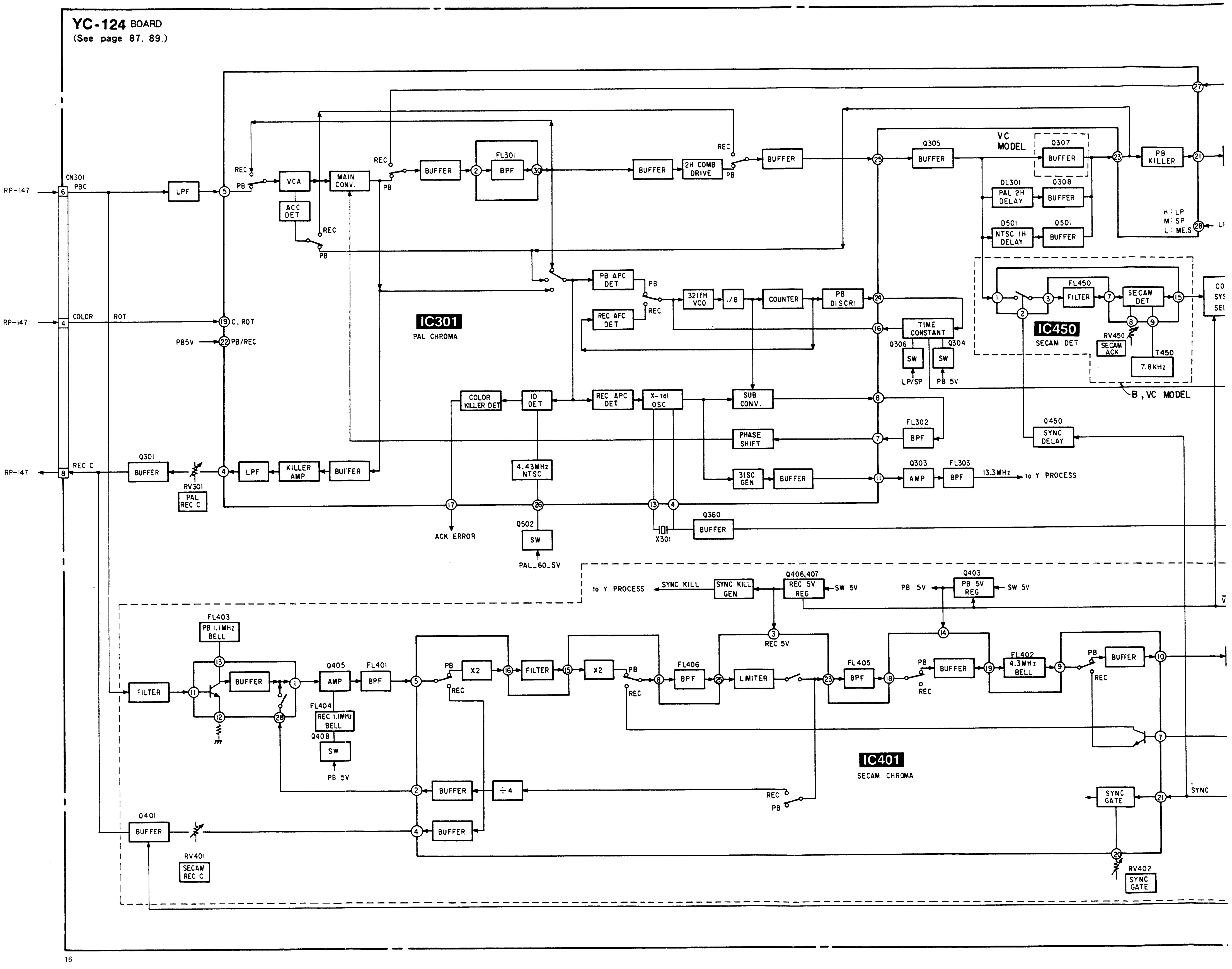

VIDEO HEAD
IC801
REC/PB AMP
REC Y
Y+C
REC C PAL
PB Y RF
PB C RF
(See page 78.)
RP-147 BOARD
CG-15 BOARD
(See page 99.)
IC601
ON SCREEN DISPLAY
OSD IN
OSD OUT
DG-11 BOARD
(See page 105.)
IC101
DIGITAL PICTURE CONTROL
P-IN-P SW
VIDEO OUT
TC-27 BOARD
(See page 142.)
IC102
TRANSCODER
B MODEL
RP-147 BOARD
(See page 78.)
IC260
FM AUDIO REC/PB AMP
AUDIO REC
PB
PB AUDIO
ROTARY HEAD REC/PB
FM AUDIO CH-1
FM AUDIO CH-2
T701, Q701
BIAS/ERASE OSC
STATIONARY ERASE HEAD
RF MODULATOR
MONITOR OUT
CNJ902
EURO-AV (LINE 1)
L-CH OUT
R-CH OUT
CNJ901
VIDEO OUT
VIDEO
LINE OUT
AUDIO
L
R
MF-170 BOARD (2/2)
(See page 132.)
(L)
(R)
CNJ302
PHONES
DRUM PG
DRUM FG
DRUM MOTOR
DRIVER
IC402
CTL HEAD
CTL HEAD CONTROL
CAPSTAN FG
CAPSTAN MOTOR
DRIVER
IC401
SERVO/ SYSTEM CONTROL
SUPPLY END SENSOR
TAKE-UP END SENSOR
SUPPLY REEL SENSOR
TAKE-UP REEL SENSOR
CASSETTE UP/DOWN
REC PROOF
CAM ROTARY ENCODER
IC404
DRIVER
CAM MOTOR
LOADING MOTOR
POWER SUPPLY BLOCK
DC +35V
UNSW +12V
SW 9V
UNSW 6V
SW 5V
MTR 12V
MTR 12V
SW 5V
UNSW 6V
DC -30V
DC 6V
DC 0V
POWER SUPPLY
POWER ON
AC IN
MF-167 BOARD
(See page 139.)
IC605
IC601
POWER ON
SIRCS
SO BUS
SI BUS
VPS CS
AD0～AD3
TIMER/ TUNER MODE CONTROL
I/O
AD4～AD6
PLL DATA
PLL CLK
BUZZER
DISPLAY
SWITCH BLOCK
IC1
KEY MATRIX
SHUTTLE JOG
LAMP
MF-169 BOARD
(See page 132.)
MODE SWITCH
MF-170 BOARD (1/2)
(See page 132.)
CNJ304
CONTROL L

3-3. VIDEO (1) BLOCK DIAGRAM

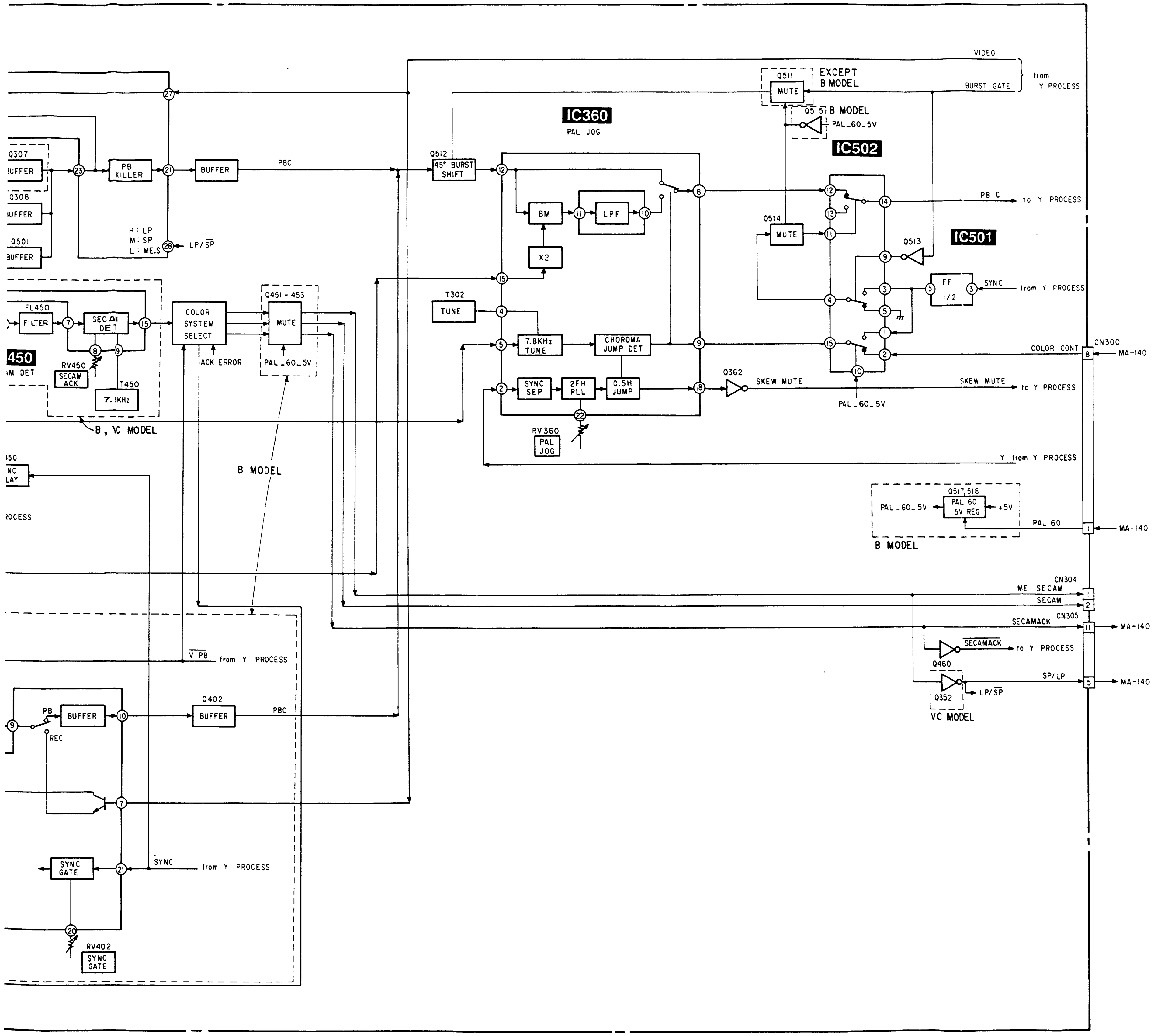

RP-147 BOARD
(See page 78.)
IC801
VIDEO REC/PB AMP
Q814
REC. P/REC
1,7,9,15
CN801
SP CH1
SP CH2
EP CH1
EP CH2
Q804
BUFFER
HPF
RF AGC
DET
Q805
BUFFER
HPF
Q806
PHASE EQ
Q807
EQ
Q809
BUFFER
Q808
Q901
SW
SP
SECAM
DET
COMP
LOGIC
SP
SW30
MODCONT
COM. SYNC
REC.P/REC
Q801
Q802
Q803
SP
Q701
AMP
SP EQ SW
SP
Q707
BUFFER
Q703,Q705
RF ENVELOPE
CN803
PB RF
CN804
PB C
PB Y RF
TO CHROMA PROCESS
C ROT
TO CHROMA PROCESS
CN802
RF ENV
MA-140
VCA
RECIDLE CURRENT ADJ
Q813
MUTE
REC
CN804
REC Y RF
REC C
FROM CHROMA PROCESS
Q810,Q811
REC 9V REG
REC9V
SW9V
REC
FLYING ERASE
CN801
Q890,Q891
ERASE OSC
Q892
CN802
FE ON
MA-140
FULL ERASE
CN260
T260
Q260
ERASE OSC
Q201
REG SW
FULL ERASE
MA-140
16
YC-124 BOARD
(See page 87, 89.)
CN301
PB Y RF
FILTER
Q124
SECAM SW
HPF
LIMITER
EQ
MIX
LPF
EQ
DROPOUT DET
DELAY
ENVELOPE DET
HPF
CLAMP
NONLINE DEEMPHA
NONLINE EMPHAS
HPF
LIMITER
DET
CN301
REC Y RF
Q121
BUFFER
HPF TRAP
Q125
SW
RV110
REC Y
FM MOD
RV103
CARR
RV102
DEV
MAIN PREEMPH
CLIP
RV104
CLIP DARK
SECAM ACK
FROM CHROMA PROCESS
CN305
RF SWP
V PB
EDIT
SHP
MA-140


IC102
1H DELAY CCD
Q111
BUFFER
1H DELAY
Q105,Q106
AMP
LPF
RV107
CCD LEVEL
13.3MHz
FROM CHROMA PROCESS
Q104
Q123
PEAKING SW
EDIT
DEEMPHASIS TIME CONSTANT
RV108
DEMOD GAIN
HPF
LIMITER
EQ
MIX
LIMITER
FM DEMOD
LPF
AMP
PB
EE
FL101
LPF
AMP
HPF
AMP
DOC
LIMITER
DETAIL LINEALITY
AMP
ATT
IC101
Y PROCESS
ROPOOT DET
DELAY
VELOPE DET
Y
TO CHROMA PROCESS
IC302
SYNC SEP
SYNC SEP
Q390
MUTE
Q310
C SYNC BUFFER
Q516
BURST GATE BUFF
SYNC
BURST GATE
TO CHROMA PROCESS
SYNC KILL
FROM CHROMA PROCESS
CN301
C SYNC 1
C SYNC 2
CN300
RP-147
MA-140
HPF
LIMITER
LPF
CLAMP
NONLINEAR DEEMPHASIS
NONLINEAR EMPHASIS
LIMITER
DET
NOISE CANCEL
PICTURE COMPENSATE
Y/C MIX
LPF
SYNC SEP
AGC DET
AGC
AMP
MUTE
AMP
FM MOD
RV103
CARR
RV102
DEV
MAIN PREEMPHASIS
CLIP
RV104
CLIP DARK
RV105
WHITE CLIP
Q107
MUTE
Q122
NOISE CANCEL SW
EDIT
RV101
AGC
Q108
SKEW
LP/SP
PB C
FROM CHROMA PROCESS
IC362
SKEW CORRECT
CN300
VIDEO OUT
MA-140
IC361
0.5H CCD
0.5H
CLK DRIVER
13.3MHz
FROM CHROMA PROCESS
Q380
BUFFER
LPF
Q381,Q382
AMP
RV361
0.5H CCD
Q362
MUTE
MA-140
FROM CHROMA PROCESS
SKEW MUTE
CN305
QVD
MA-140
TO CHROMA PROCESS
VIDEO
VIDEO IN
MA-140

3- 4. VIDEO (2) BLOCK DIAGRAM

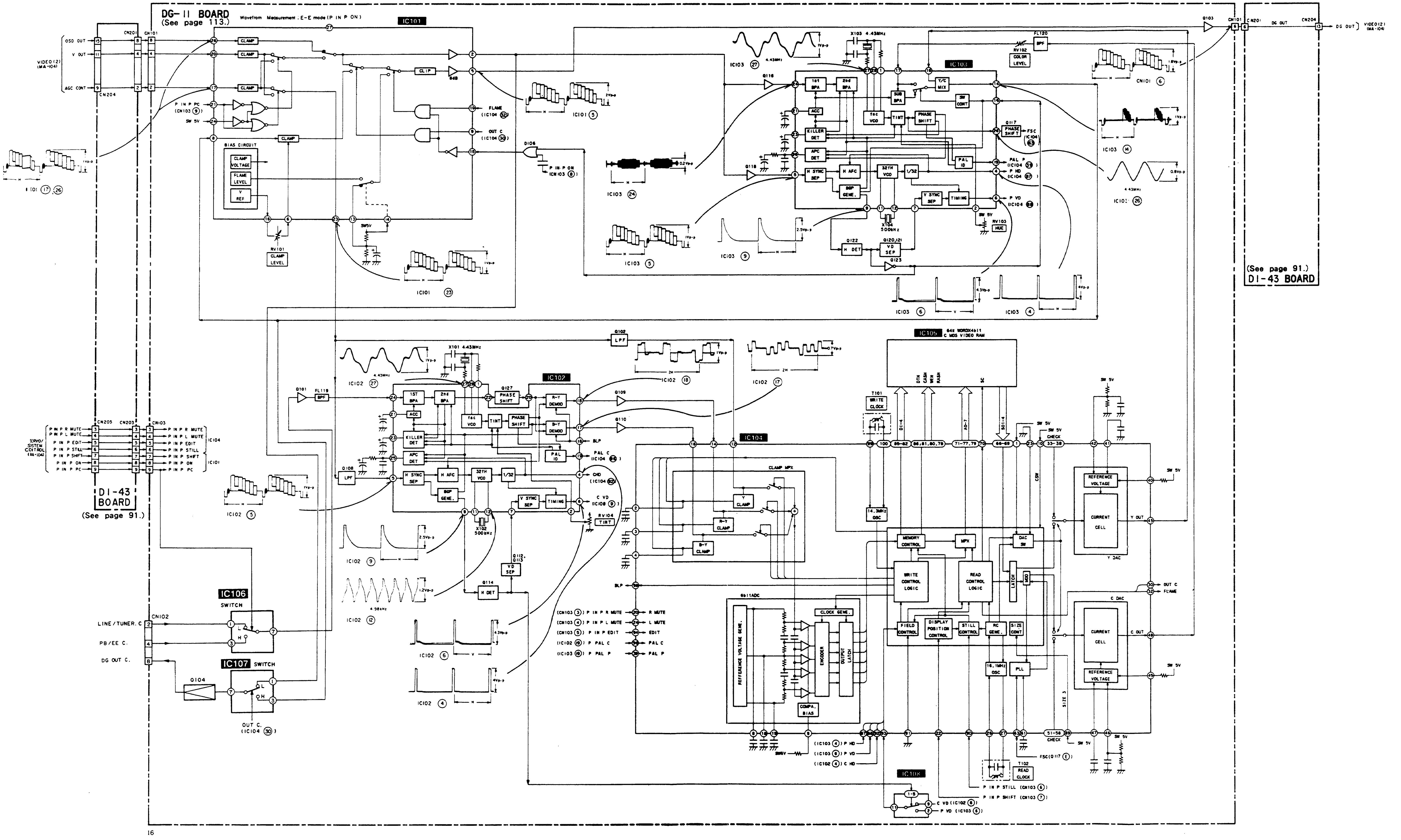


YC-124 BOARD
(See page 87, 89.)
RP-147
RP-147
RP-147
CN301
PBC
COLOR
ROT
REC C
LPF
C. ROT
PB5V
PB/REC
REC
PB
VCA
ACC DET
MAIN CONV.
BUFFER
FL301
BPF
BUFFER
2H COMB DRIVE
BUFFER
Q305
BUFFER
VC MODEL
Q307
BUFFER
PB KILLER
DL301
PAL 2H DELAY
Q308
BUFFER
D501
NTSC 1H DELAY
Q501
BUFFER
H: LP
M: SP
L: ME.S
PB APC DET
REC AFC DET
321fH VCO
1/8
COUNTER
PB DISCRI
TIME CONSTANT
Q306
Q304
SW
SW
LP/SP
PB 5V
FL450
FILTER
SECAM DET
IC450
SECAM DET
RV450
SECAM ACK
T450
7.8KHz
B, VC MODEL
IC301
PAL CHROMA
COLOR KILLER DET
ID DET
REC APC DET
X-tal OSC
SUB CONV.
PHASE SHIFT
FL302
BPF
Q450
SYNC DELAY
Q301
BUFFER
RV301
PAL REC C
LPF
KILLER AMP
BUFFER
4.43MHz NTSC
3fSC GEN
BUFFER
Q303
AMP
FL303
BPF
13.3MHz
to Y PROCESS
ACK ERROR
Q502
SW
PAL_60_SV
X301
Q360
BUFFER
to Y PROCESS
SYNC KILL
SYNC KILL GEN
Q406,407
REC 5V REG
SW 5V
PB 5V
Q403
PB 5V REG
SW 5V
FL403
PB 1.1MHz BELL
FILTER
BUFFER
Q405
AMP
FL401
BPF
FL404
REC 1.1MHz BELL
Q408
SW
PB 5V
X2
FILTER
X2
FL406
BPF
REC 5V
LIMITER
FL405
BPF
BUFFER
FL402
4.3MHz BELL
BUFFER
IC401
SECAM CHROMA
BUFFER
÷4
BUFFER
SYNC GATE
SYNC
Q401
BUFFER
RV401
SECAM REC C
RV402
SYNC GATE
16


IC360
PAL JOG
IC502
IC501
VIDEO
Q511
MUTE
EXCEPT B MODEL
BURST GATE
from Y PROCESS
Q515
B MODEL
PAL_60_5V
Q307
BUFFER
Q308
BUFFER
Q501
BUFFER
PB KILLER
BUFFER
PBC
H : LP
M : SP
L : ME.S
LP/SP
Q512
45° BURST SHIFT
BM
LPF
X2
T302
TUNE
7.8KHz TUNE
CHOROMA JUMP DET
SYNC SEP
2FH PLL
0.5H JUMP
RV360
PAL JOG
Q362
SKEW MUTE
SKEW MUTE
to Y PROCESS
PB C
to Y PROCESS
Q514
MUTE
Q513
FF 1/2
SYNC
from Y PROCESS
COLOR CONT
CN300
MA-140
PAL_60_5V
Y from Y PROCESS
Q517,518
PAL 60 5V REG
+5V
PAL 60
MA-140
B MODEL
FL450
FILTER
SECAM DET
450
AM DET
RV450
SECAM ACK
T450
7.8KHz
B, VC MODEL
COLOR SYSTEM SELECT
ACK ERROR
Q451-453
MUTE
PAL_60_5V
B MODEL
150
NC LAY
ROCESS
CN304
ME SECAM
SECAM
CN305
SECAMACK
MA-140
SECAMACK
to Y PROCESS
Q460
SP/LP
MA-140
Q352
LP/SP
VC MODEL
V PB
from Y PROCESS
PB
REC
BUFFER
Q402
BUFFER
PBC
SYNC GATE
SYNC
from Y PROCESS
RV402
SYNC GATE

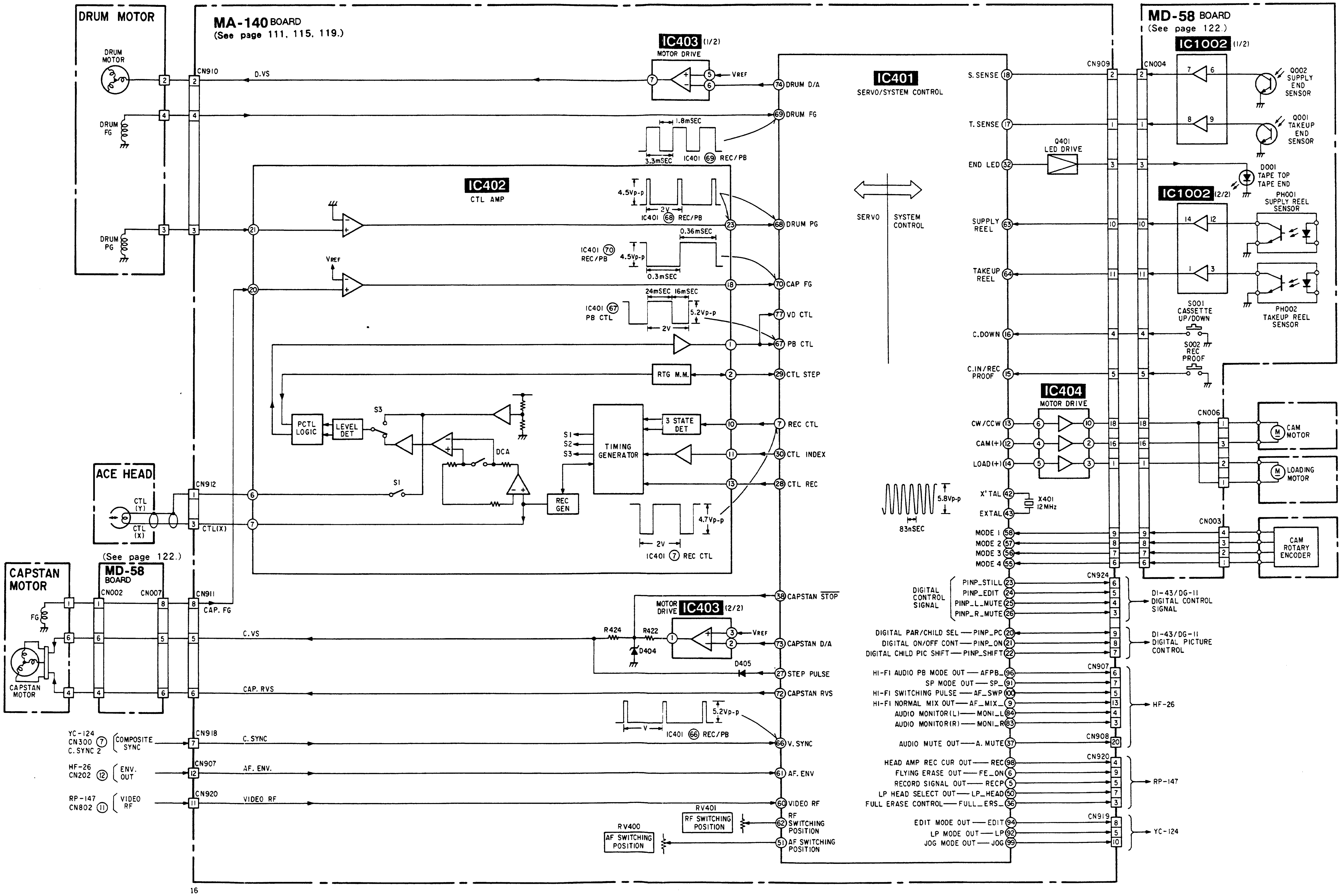
3-5. DIGITAL PICTURE BLOCK DIAGRAM

3-6. SERV


DG-11 BOARD
(See page 113.)
Wavefrom Measurement : E-E mode (P IN P ON)
IC101
VIDEO(2)
(MA-104)
OSD OUT
V OUT
AGC CONT
CN201
CN101
CN204
CLAMP
CLIP
6dB
P IN P PC
(CN103 ⑨)
SW 5V
FLAME
(IC104 ㉜)
OUT C
(IC104 ㉚)
D106
P IN P ON
(CN103 ⑧)
BIAS CIRCUIT
CLAMP VOLTAGE
FLAME LEVEL
V REF
RV101
CLAMP LEVEL
SW5V
IC101 ⑰ ㉖
IC101 ⑤
IC101 ㉓
IC103
X103 4.43MHz
Q116
Q118
1st BPA
2nd BPA
SUB BPA
Y/C MIX
SW CONT
ACC
KILLER DET
APC DET
H SYNC SEP
H AFC
BGP GENE.
T&C VCO
TINT
PHASE SHIFT
32TH VCO
1/32
PAL ID
V SYNC SEP
TIMING
Q117
PHASE SHIFT
FSC (IC104 ㊸)
PAL P (IC104 ㉝)
P HD (IC104 ㊲)
P VD (IC104 ㉑)
X104 500kHz
RV103 HUE
FL120 BPF
RV102 COLOR LEVEL
Q122 H DET
Q120,121 VD SEP
Q123
IC103 ㉗
IC103 ㉔
IC103 ⑤
IC103 ⑨
IC103 ⑥
IC103 ④
IC103 ⑭
IC102 ㉖
CN101 ⑥
Q103
CN101 CN201 CN204
DG OUT
VIDEO(2) (MA-104)
(See page 91.)
DI-43 BOARD
IC102
X101 4.43MHz
Q101
FL119 BPF
Q108 LPF
1ST BPA
2nd BPA
Q127 PHASE SHIFT
R-Y DEMOD
B-Y DEMOD
Q109
Q110
BLP
PAL ID
PAL C (IC104 ㉞)
CHD (IC104 ㉟)
C VD (IC108 ⑨)
RV104 TINT
X102 500kHz
Q112,113 VD SEP
Q114 H DET
Q102 LPF
IC102 ㉗
IC102 ⑱
IC102 ⑰
IC102 ⑤
IC102 ⑨
IC102 ⑫
IC102 ⑥
IC102 ④
CN205 CN203 CN103
SERVO/SYSTEM CONTROL (MA-104)
P IN P R MUTE
P IN P L MUTE
P IN P EDIT
P IN P STILL
P IN P SHIFT
P IN P ON
P IN P PC
IC104
IC101
DI-43 BOARD
(See page 91.)
IC106 SWITCH
LINE/TUNER. C
PB/EE C.
DG OUT C.
CN102
IC107 SWITCH
Q104
OUT C. (IC104 ㉚)
IC104
CLAMP MPX
Y CLAMP
R-Y CLAMP
B-Y CLAMP
(CN103 ③) P IN P R MUTE → R MUTE
(CN103 ④) P IN P L MUTE → L MUTE
(CN103 ⑤) P IN P EDIT → EDIT
(IC102 ⑯) P PAL C → PAL C
(IC103 ⑲) P PAL P → PAL P
6bit ADC
REFERENCE VOLTAGE GENE.
CLOCK GENE.
ENCODER
OUTPUT LATCH
COMPA. BIAS
(IC103 ⑧) P HD
(IC103 ⑥) P VD
(IC102 ④) C HD
IC105 64k WORD×4bit C MOS VIDEO RAM
T101 WRITE CLOCK
14.3MHz OSC
MEMORY CONTROL
MPX
DAC SW
WRITE CONTROL LOGIC
READ CONTROL LOGIC
LATCH
FIELD CONTROL
DISPLAY POSITION CONTROL
STILL CONTROL
RC GENE.
SIZE CONT
16.1MHz OSC
PLL
T102 READ CLOCK
FSC (Q117 ⓔ)
SW 5V
CHECK
REFERENCE VOLTAGE
CURRENT CELL
Y DAC
Y OUT
C DAC
C OUT
OUT C
FLAME
IC108
1/5
C VD (IC102 ⑧)
P VD (IC103 ⑥)
P IN P STILL (CN103 ⑥)
P IN P SHIFT (CN103 ⑦)

16

3-6. SERVO SYSTEM CONTROL BLOCK DIAGRAM


DRUM MOTOR
DRUM MOTOR
DRUM FG
DRUM PG
MA-140 BOARD
(See page 111, 115, 119.)
CN910
D.VS
IC403 (1/2)
MOTOR DRIVE
VREF
IC401
SERVO/SYSTEM CONTROL
DRUM D/A
DRUM FG
1.8mSEC
3.3mSEC
IC401 ⑯ REC/PB
IC402
CTL AMP
4.5Vp-p
2V
IC401 ⑱ REC/PB
0.36mSEC
IC401 ⑳ REC/PB
0.3mSEC
DRUM PG
CAP FG
24mSEC 16mSEC
IC401 ⑰ PB CTL
5.2Vp-p
VD CTL
PB CTL
RTG M.M.
CTL STEP
S3
PCTL LOGIC
LEVEL DET
DCA
3 STATE DET
S1
S2
S3
TIMING GENERATOR
REC CTL
CTL INDEX
CTL REC
REC GEN
4.7Vp-p
IC401 ⑦ REC CTL
ACE HEAD
CTL (Y)
CTL (X)
CN912
CTL(X)
(See page 122.)
MD-58 BOARD
CN002
CN007
CAPSTAN MOTOR
FG
CAPSTAN MOTOR
CN911
CAP. FG
C.VS
CAP. RVS
MOTOR DRIVE
IC403 (2/2)
R424
R422
D404
D405
CAPSTAN STOP
CAPSTAN D/A
STEP PULSE
CAPSTAN RVS
5.2Vp-p
V
IC401 ⑯ REC/PB
V. SYNC
YC-124 CN300 ⑦ C. SYNC 2
COMPOSITE SYNC
CN918
C. SYNC
HF-26 CN202 ⑫
ENV. OUT
CN907
AF. ENV.
AF. ENV
RP-147 CN802 ⑪
VIDEO RF
CN920
VIDEO RF
RV401
RF SWITCHING POSITION
RV400
AF SWITCHING POSITION
RF SWITCHING POSITION
AF SWITCHING POSITION
SERVO
SYSTEM CONTROL
S. SENSE
T. SENSE
END LED
Q401
LED DRIVE
SUPPLY REEL
TAKEUP REEL
C.DOWN
C.IN/REC PROOF
IC404
MOTOR DRIVE
CW/CCW
CAM(+)
LOAD(+)
X'TAL
EXTAL
X401
12MHz
5.8Vp-p
83nSEC
MODE 1
MODE 2
MODE 3
MODE 4
CN909
MD-58 BOARD
(See page 122.)
IC1002 (1/2)
CN004
Q002 SUPPLY END SENSOR
Q001 TAKEUP END SENSOR
D001 TAPE TOP TAPE END
IC1002 (2/2)
PH001 SUPPLY REEL SENSOR
PH002 TAKEUP REEL SENSOR
S001 CASSETTE UP/DOWN
S002 REC PROOF
CN006
CAM MOTOR
LOADING MOTOR
CN003
CAM ROTARY ENCODER
CN924
DIGITAL CONTROL SIGNAL
PINP_STILL
PINP_EDIT
PINP_L_MUTE
PINP_R_MUTE
DI-43/DG-11 DIGITAL CONTROL SIGNAL
DIGITAL PAR/CHILD SEL — PINP_PC
DIGITAL ON/OFF CONT — PINP_ON
DIGITAL CHILD PIC SHIFT — PINP_SHIFT
DI-43/DG-11 DIGITAL PICTURE CONTROL
HI-FI AUDIO PB MODE OUT — AFPB
SP MODE OUT — SP
HI-FI SWITCHING PULSE — AF_SWP
HI-FI NORMAL MIX OUT — AF_MIX
AUDIO MONITOR(L) — MONI_L
AUDIO MONITOR(R) — MONI_R
HF-26
CN908
AUDIO MUTE OUT — A. MUTE
CN920
HEAD AMP REC CUR OUT — REC
FLYING ERASE OUT — FE_ON
RECORD SIGNAL OUT — RECP
LP HEAD SELECT OUT — LP_HEAD
FULL ERASE CONTROL — FULL_ERS
RP-147
CN919
EDIT MODE OUT — EDIT
LP MODE OUT — LP
JOG MODE OUT — JOG
YC-124
16

MC-Service

3-7. SYSTEM CONTROL MICROCOMPUTER PORT FUNCTIONS DESCRIPTION

- **IC401 CXP80724-040Q**

Signal	I/0	Pin No.	Description
RF_SWP	0	1	RF switching pulse
QVD	0	2	Quasi VD
QHD_ENBLE	0	3	Quasi HD voltage level control
AF_RECP_	0	4	Hi-fi record control
RECP	0	5	Record signal
FE_ON	0	6	Flying erase
REC_CTL	I/0	7	REC.CTL
SYNC_PLS	0	8	Pulse for V sync communication
AF_MIX_	0	9	Hi-fi/normal mix
NA_RECP_	0	10	Normal audio recording signal
NAP B	0	11	Normal audio playback mode
CAM	0	12	Cam motor selection
CW	0	13	Motor rotation direction control
LOAD	0	14	Loading motor selection
C_IN/REC_PRF	I	15	Cassette-IN. Claw broken detect switch input
C_DOWN_	I	16	Cassette compartment down switch input
T_SENS	I	17	Tape-top sensor input
S_SENS	I	18	Tape-end sensor input
COLOR_CONT	0	19	PAL jog control
PINP_PC	*I/0	20	Digital child/parent select (*INITIAL mode input port)
PINP_ON	0	21	Digital ON/OFF_ control
PINP_SHIFT	0	22	Digital child picture move control
PINP_STILL	0	23	Digital control signal
PINP_EDIT	0	24	Digital control signal
PINP_L_MUTE	0	25	Digital control signal
PINP_R_MUTE	0	26	Digital control signal
STEP_PLS_	0	27	Step pulse
CTL_REC	0	28	CTL amp record inhibit
CTL_STEP	0	29	CTL amp step control
CTL_INDEX	0	30	CTL amp index control
AV_CTRL	0	31	(C+) TV/video select
END_LED	0	32	Top end sensor detect lamp
CAP_TRQ2	0	33	Capstan current limiter-2
CAP_TRQ1	0	34	Capstan current limiter-1
NA_MUTE	0	35	Normal audio mute
FULL_ERS_	0	36	Full erase control
A_MUTE	0	37	Audio mute
CAPSTOP_	0	38	Capstan motor stop
METER_L	I	48	Level meter L-ch input
METER_R	I	49	Level meter R-ch input
LP_HEAD	0	50	LP head selection
AFSW_POS	I	51	Hi-fi switching position adj.
MODE4	I	55	Cam encoder data-4
MODE3	I	56	Cam encoder data-3
MODE2	I	57	Cam encoder data-2
MODE1	I	58	Cam encoder data-1
NC	I	59	

Signal	I/O	Pin No.	Description
RF_ENV	I	60	Video playback signal envelope
AF_ENV	I	61	Hi-fi audio playback signal envelope
SW_POS	I	62	Head switching position adj.
SREEL_FG	I	63	S-side reel FG input
TREEL_FG	I	64	T-side reel FG input
NC	I	65	
V_SYNC	I	66	Composite sync input
PB_CTL	I	67	Servo CTL input
DRM_PG	I	68	Drum PG input
DRM_FG	I	69	Drum FG input
CAP_FG	I	70	Capstan FG input
TA_MUTE	0	71	Tuner audio mute
CAPRVS	0	72	Capstan reverse control
CAP_DA	0	73	Capstan D/A output
DRUM_DA	0	74	Drum D/A output
SKEW_ON	0	75	PAL jog control
SC_ON	0	76	Simultaneous Cast mode
VD_CTL	I	77	CTL counter input
MIC_SW_	I	78	Mic SW input (LOW active)
NORM_CONT1	0	79	Normal audio select function-1
NORM_CONT2	0	80	Normal audio select function-2
LINE1	0	81	Audio input selection-1
LINE2	0	82	Audio input selection-2
MONI_R	0	83	Audio monitor-R
MONI_L	0	84	Audio monitor-L
HEAD_CONT	I/0	85	Head amp control
SP_	0	91	SP mode (LOW active)
LP	0	92	LP mode
V_LINE1	0	93	Video input control-1
EDIT	0	94	Edit mode
VPB_	0	95	Video system playback mode
AFPB_	0	96	Hi-fi audio playback mode
V_LINE2	0	97	Video input control-2
REC	0	98	Head amp record current
JOG	0	99	Jog mode
AF_SWP	0	100	Hi-fi switching pulse

3-8. SYSTEM CONTROL —SERVO PERIPHERAL CIRCUIT INTERFACE—

- **IC401 on MA-140 board.**

SIGNAL	PIN NO.	I/O	STOP	FF	REW	TAPE/ THREAD-ING	TAPE UNTHREAD-ING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC-PAUSE	PB INDEX WRT/ERS
REC CTL	7	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	
CAP STOP	38	O (O.D)	L	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	L	*3	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	HI-Z (O.D)	
STEP PLS	27	O	L	L	L	L	L	L	L	*2	L	L	L	L	L	
CTC REC	28	O	L	L	L	L	L	L	L	L	L	L	L	H	H	H
INDEX	30	O	L	L	L	L	L	L	L	L	L	L	L	L	L	H
PB CTL	67	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H	
VD CTL	77	I	H	*6	*6			*1	H/L	*2	*6	*6	*6	*1	H	
DRUM PG	68	I	*4	*7	*7	*5	*5	*7	*7	*7	*7	*7	*7	*7	*7	
DRUM FG	69	I	*4	*8	*8	*5	*5	*8	*8	*8	*8	*8	*8	*8	*8	
CAP FG	70	I	H/L	*6	*6	*5	*5	*6	H/L	*9	*6	*6	*6	*6	H/L	
CAP RVS	72	O	H/L	L	H	L	H	L	L	*2	L	L	H	L	L	
CAP DA	73	O	*10	*10	*10	*10	*10	*11	*10	*10	*11	*11	*11	*11	*10	
DRUM DA	74	O	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	*12	
CTL STEP	29	O	L	L	L	L	L	L	L	*13	L	L	L	L	L	

*1. 30Hz pulse.
*2. Tape running pulse.
*3. Inverted logic pulse of STEP PLS
*4. During drum stop "L"
*5. Non periodical pulse.
*6. Cycle pulse proportional to tape speed.
*7. 30Hz pulse.
*8. 360Hz pulse.
*9. Tape running pluse.
*10. Approx. 2 msec cycle "H" or "L" pulse.
*11. Approx. 1.5 msec cycle "H" or "L" pulse.
*12. Approx. 3 msec cycle "H" or "L" pulse.
*13. "H" in FWD direction, during STEP drive mode.

3-9. SYSTEM CONTROL —MECHANISM BLOCK INTERFACE—

- **IC401 on MA-140 board.**

SIGNAL	PIN NO.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD-ING	TAPE/ THREAD-ING	TAPE UNTHREAD-ING	STOP	FF	REW
CAM *1	12	O	L	L	L	L	H	H	L	L	L
LOAD	14	O	L	L	H	H	L	L	L	L	L
CW/CCW	13	O			H	L	H	L			
MODE 1	58	I	H	L	L	L	H	H	L	H	H
MODE 2	57	I	L	H	H	H	H	H	L	L	L
MODE 3	56	I	H	H	H	H	L	L	L	L	L
MODE 4	55	I	H	H	H	H	H	H	L	H	H
REC PRF	15	I	*2	L	*2	*2	*2	*2	*2	*2	*2
C-UP/DOWN	16	I	L	H	H→L	L→H	L	L	L	L	L
T REEL	64	I	*3	H/L	H/L	H/L	H/L	H/L	H/L	*3	*3
S REEL	63	O	*3	H/L	H/L	H/L	*3	*3	H/L	*3	*3
END LED	32	O (O.D)	*4	*4	*4	*4	*4	*4	*4	*4	*4
CAP TRQ 1	33	O (O.D)	*1							*1	*1
CAP TRQ 2	34	O (O.D)								*1	*1
CAP STOP	38	O (O.D)	H	L	L	L	H	H	L	H	H
CAP RVS	72	O	H	H			L	H	H/L	L	H
CAP DA *8	73	O									
T SENS	17	I	*7	*4	*4	*4	*7	*7	*7	*7	*7
S SENS	18	I	*7	*4	*4	*4	*7	*7	*7	*7	*7

*1. "H" : when mechanical mode shifted.
*2. "L" : when erasure protection tab is removed,
"H" : When not removed.
*3. Cycle pulse proportional to reel rotation speed.
*4. Approx. 2 msec cycle "H" pulse.
*6. During tape run, "L" only when CAP
*7. "L" : normally. 2 msec cycle "H" pulse
top or end is detected.
*8. Tape running pulse.

3-10. SYSTEM CONTROL —SERVO PERIPHERAL CIRCUIT INTERFACE—

- **IC401 on MA-140 board.**

Signal	I/O	Pin No.	Input/output level
$\overline{\text{COSMO}\cdot\text{RESET}}$	I	40	"H" : normally. "L" : when power failure detected or power failure restore
$\overline{\text{COSMO}\cdot\text{CS}}$	I	44	Chip select signal from timer micro computer. V cycle "L" pulse.
SI • BUS	I	45	Serial communication data from timer micro computer. V cycle "L" pulse.
SO • BUS	O	46	Serial communication data to timer micro computer. V cycle "L" pulse.
S CLK	I	47	Serial communication clock with timer micro computer. V cycle "L" pulse.

VIEW	REC	REC-PAUSE	PB INDEX WRT/ERS
∗1	∗1	∗1	
HI-Z O.D)	HI-Z (O.D)	HI-Z (O.D)	
L	L	L	
L	H	H	H
L	L	L	H
∗6	∗1	H	
∗6	∗1	H	
∗7	∗7	∗7	
∗8	∗8	∗8	
∗6	∗6	H/L	
H	L	L	
∗11	∗11	∗10	
∗12	∗12	∗12	
L	L	L	

ode.

3-9. SYSTEM CONTROL —MECHANISM BLOCK INTERFACE—

- **IC401 on MA-140 board.**

SIGNAL	PIN NO.	I/O	HI-SPEED REW	EJECTED	CASSETTE LOADING	CASSETTE UNLOAD-ING	TAPE/ THREAD-ING	TAPE UNTHREAD-ING	STOP	FF	REW	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
CAM ∗1	12	O	L	L	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L
LOAD	14	O	L	L	H	H	L	L	L	L	L	L	L	L	L	L	L	L	L
CW/CCW	13	O			H	L	H	L											
MODE 1	58	I	H	L	L	L	H	H	L	H	H	H	L	L	H	H	H	H	L
MODE 2	57	I	L	H	H	H	H	H	L	L	L	L	H	H	L	L	L	L	H
MODE 3	56	I	H	H	H	H	L	L	L	L	L	H	H	H	H	H	L	H	H
MODE 4	55	I	H	H	H	H	H	H	L	H	H	L	L	L	L	L	L	L	L
REC PRF	15	I	∗2	L	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2	∗2
C-UP/DOWN	16	I	L	H	H→L	L→H	L	L	L	L	L	L	L	L	L	L	L	L	L
T REEL	64	I	∗3	H/L	H/L	H/L	H/L	H/L	H/L	∗3	∗3	∗3	H/L	∗3	∗3	∗3	∗3	∗3	H/L
S REEL	63	O	∗3	H/L	H/L	H/L	∗3	∗3	H/L	∗3	∗3	∗3	H/L	∗3	∗3	∗3	∗3	∗3	H/L
END LED	32	O (O.D)	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4	∗4
CAP TRQ 1	33	O (O.D)	∗1							∗1	∗1			∗6		∗1	∗1		
CAP TRQ 2	34	O (O.D)								∗1	∗1								
CAP STOP	38	O (O.D)	H	L	L	L	H	H	L	H	H	H	L	∗8	H	H	H	H	L
CAP RVS	72	O	H	H			L	H	H/L	L	H	L	L	L/∗8	L	L	H	L	L
CAP DA ∗8	73	O																	
T SENS	17	I	∗7	∗4	∗4	∗4	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7
S SENS	18	I	∗7	∗4	∗4	∗4	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7	∗7

∗1. "H" : when mechanical mode shifted.

∗2. "L" : when erasure protection tab is removed,
"H" : When not removed.

∗3. Cycle pulse proportional to reel rotation speed.

∗4. Approx. 2 msec cycle "H" pulse.

∗6. During tape run, "L" only when CAP RVS is "H".

∗7. "L" : normally. 2 msec cycle "H" pulse : when tape top or end is detected.

∗8. Tape running pulse.

3-10. SYSTEM CONTROL —SERVO PERIPHERAL CIRCUIT INTERFACE—

- **IC401 on MA-140 board.**

Signal	I/O	Pin No.	Input/output level
$\overline{\text{COSMO • RESET}}$	I	40	"H" : normally. "L" : when power failure detected or power failure restored.
$\overline{\text{COSMO • CS}}$	I	44	Chip select signal from timer micro computer. V cycle "L" pulse.
SI • BUS	I	45	Serial communication data from timer micro computer. V cycle "L" pulse.
SO • BUS	O	46	Serial communication data to timer micro computer. V cycle "L" pulse.
S CLK	I	47	Serial communication clock with timer micro computer. V cycle "L" pulse.

3-11. SYSTEM CONTROL —VIDEO BLOCK INTERFACE—

- **IC401 on MA-140 board.**

SIGNAL	PIN NO.	I/O	STOP/ FF/ REW	TAPE/ THREAD-ING	TAPE UNTHREAD-ING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC-PAUSE
V • PB	95	O	H	H	H	L	L	L	L	L	L	H	H
HEAD CONT	85	O	L	L	L	L	HI-Z (2.5V)	*1	*9	*5	*5	L	L
RF SW P (SW30)	1	O	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2	*2
Q VD/V MUTE	2	O	L	L	L	*3	*4	*4	*4	*4	*4	L	L
SP	91	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
SP • 2	92	O	*6	*6	*6	*7	*7	*7	*7	*7	*7	*6	*6
LP	93	O	L	L	L	*7	*7	*7	*7	*7	*7	L	L
REC • P	5	O	L	L	L	L	L	L	L	L	L	L	H
REC	98	O	L	L	L	L	L	L	L	L	L	H	H
V SYNC	66	I	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8	*8
V LINE 1	93	O	*11										
V LINE 2	97	O											

*1. In forward direction slow mode :
during tape stop "HI-Z (2.5V)" during tape run (for about 40ms) "L".
In reverse direction slow mode :
during tape stop "HI-Z (2.5V)" during tape run (for about 40ms).
SP mode "H"
EP mode "L"

*2. Sync with drum revolution. 30 Hz 50% DUTY pulse.

*3. "L"normaly. "H" : when CTL signal is not played back.

*4. V cycle "H" pulse.

*5. According to SP/EP selector. "H" : SP mode, "L" : EP mode.

*6. According to SP/EP selector. "L" : SP mode, "H" : EP mode.

*7. According to tape REC mode.

Mode / Signal	LINE1	LINE2	EP
SP (Pin pin)	L	H	H
EP (Pin pin)	L	L	H

*8. Composite sync signal (positive polarity).

*9. Accroding to SP/EP selector. "H" : SP mode, "HI-Z (2.5V)" : EP mode.

*11. According to Input selector mode.

Mode / Signal	LINE1	LINE2	TUNER LINE3/CT SC
V LINE 1 (Pin pin)	H	L	H
V LINE 2 (Pin pin)	L	L	H

3-12. SYSTEM CONTROL —AUDIO BLOCK INTERFACE—

- **IC401 on MA-140 board.**

SIGNAL	PIN NO.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOAD-ING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
AF PB	96	O	H	H	H	H	L	L	L	L	L	L	H
MONI (L)	84	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
MONI (R)	83	O	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1	*1
AF ENVELOP	61	I	AF RF envelope signal input pin for auto tracking										
NA PB	11	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	37	O (O.D)	L	L	L	*4	H	H	H	H	H	L	L
SP	91	O	*2	*2	*2	*3	*3	*3	*3	*3	*2	*2	*2
NA REC • P	10	O	L	L	L	L	L	L	L	L	L	H	L
AF RECP	4	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	100	O	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5	*5
AF SW POSITION	51	I	input pin for AF switching position adj.										
SC – ON	76	O	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6	*6
MICSW	78	I	mic. input switch (low when input)										
AF MIX	9	O (O.D)	L	L	L	*9	*9	*9	*9	*9	*9	L	L
METER (L)	48	I	input pin for audio level meter (left) display										
METER (R)	49	I	input pin for audio level meter (right) display										
FULL ERS	36	O (O.D)	H	H	H	H	H	H	H	H	H	L	H
NOR A MUTE	35	O	L	L	L	*4	H	H	H	H	H	L	L
NOR CONT 1	79	O	*10. normal audio control signal										
NOR CONT 2	80	O											

*1. Depending upon audio monitor

audio monitor / signal	stereo or main/sub left/right	main left	sub right	(normal)
MONI (L)	H	H	L	L
MONI (R)	H	L	H	L

*2. Depending upon SP/EP selector. SP mode "L", EP mode "H".

*3. Depending upon recording mode on tape . SP mode "L", EP mode "H".

*4. "H" when CTL signal is not played back.

*5. 30Hz, 50% duty pulse after about 5 msec delayed from RF SW P.

*6. "H" during simul-cast ON.

*9. "H" when HIFI/NORMAL MIX ON.

*10.

input / signal	bilingual send/receive	others
NOR CONT 1(79)	L	H
NOR CONT 2(99)	H	H

3-13. S

- **IC401**

Si
STEREC
BILING
TAMUT
F MONC

3-14. S

- **IC401**

Si
TV/VTF
LINE 1
LINE 2

*1.

Sig
LI
LI

3-15. S

- **IC401**

Si
Pin P C
Pin P F
Pin P S
Pin P E
Pin P N
Pin L N
Pin Still

3-12. SYSTEM CONTROL —AUDIO BLOCK INTERFACE—

- **IC401 on MA-140 board.**

SIGNAL	PIN NO.	I/O	STOP/ FF/ REW	TAPE LOADING	TAPE UNLOAD-ING	PB	PB • PAUSE	SLOW	×2	CUE	REVIEW	REC	REC • PAUSE
$\overline{\text{AF PB}}$	96	O	H	H	H	H	L	L	L	L	L	L	H
MONI (L)	84	O	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1
MONI (R)	83	O	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1	∗1
AF ENVELOP	61	I	AF RF envelope signal input pin for auto tracking										
NA PB	11	O	L	L	L	H	H	H	H	H	H	L	L
A MUTE	37	O (O.D)	L	L	L	∗4	H	H	H	H	H	L	L
$\overline{\text{SP}}$	91	O	∗2	∗2	∗2	∗3	∗3	∗3	∗3	∗3	∗2	∗2	∗2
NA REC • $\overline{\text{P}}$	10	O	L	L	L	L	L	L	L	L	L	H	L
AF REC$\overline{\text{P}}$	4	O	L	L	L	L	L	L	L	L	L	H	L
AF SWP	100	O	∗5	∗5	∗5	∗5	∗5	∗5	∗5	∗5	∗5	∗5	∗5
AF SW POSITION	51	I	input pin for AF switching position adj.										
SC – ON	76	O	∗6	∗6	∗6	∗6	∗6	∗6	∗6	∗6	∗6	∗6	∗6
MICSW	78	I	mic. input switch (low when input)										
AF MIX	9	O (O.D)	L	L	L	∗9	∗9	∗9	∗9	∗9	∗9	L	L
METER (L)	48	I	input pin for audio level meter (left) display										
METER (R)	49	I	input pin for audio level meter (right) display										
$\overline{\text{FULL ERS}}$	36	O (O.D)	H	H	H	H	H	H	H	H	H	L	H
NOR A MUTE	35	O	L	L	L	∗4	H	H	H	H	H	L	L
NOR CONT 1	79	O	∗10. normal audio control signal										
NOR CONT 2	80	O											

∗1. Depending upon audio monitor

signal \ audio monitor	stereo or main/sub left/right	main left	sub right	(normal)
MONI (L)	H	H	L	L
MONI (R)	H	L	H	L

∗2. Depending upon SP/EP selector. SP mode "L", EP mode "H".

∗3. Depending upon recording mode on tape . SP mode "L", EP mode "H".

∗4. "H" when CTL signal is not played back.

∗5. 30Hz, 50% duty pulse after about 5 msec delayed from RF SW P.

∗6. "H" during simul-cast ON.

∗9. "H" when HIFI/NORMAL MIX ON.

∗10.

signal \ input	bilingual send/receive	others
NOR CONT 1(79)	L	H
NOR CONT 2(99)	H	H

3-13. SYSTEM CONTROL —TUNER BLOCK INTERFACE—

- **IC401 on MA-140 board.**

Signal	I/O	Pin No.	Input/output level
$\overline{\text{STEREO}}$	I	21	Tuner audio input pin. "L" in stereo
$\overline{\text{BILING}}$	I	22	Tuner audio input pin. "L" in bilingual
TAMUTE	O	71	Tuner audio mute output. "H" during tuning operation or during tuned to blank channel.
$\overline{\text{F MONO}}$	O (O.D)	31	Tuner audio mute output. "L" during auto stereo OFF.

3-14. SYSTEM CONTROL —RF MODULATION/INPUT SELECTOR BLOCK INTERFACE—

- **IC401 on MA-140 board.**

Signal	I/O	Pin No.	Input/output level
TV/VTR	I	31	"L" when RF modulator is through mode.
LINE 1	I	81	∗1 input select control signal
LINE 2	I	82	

∗1.

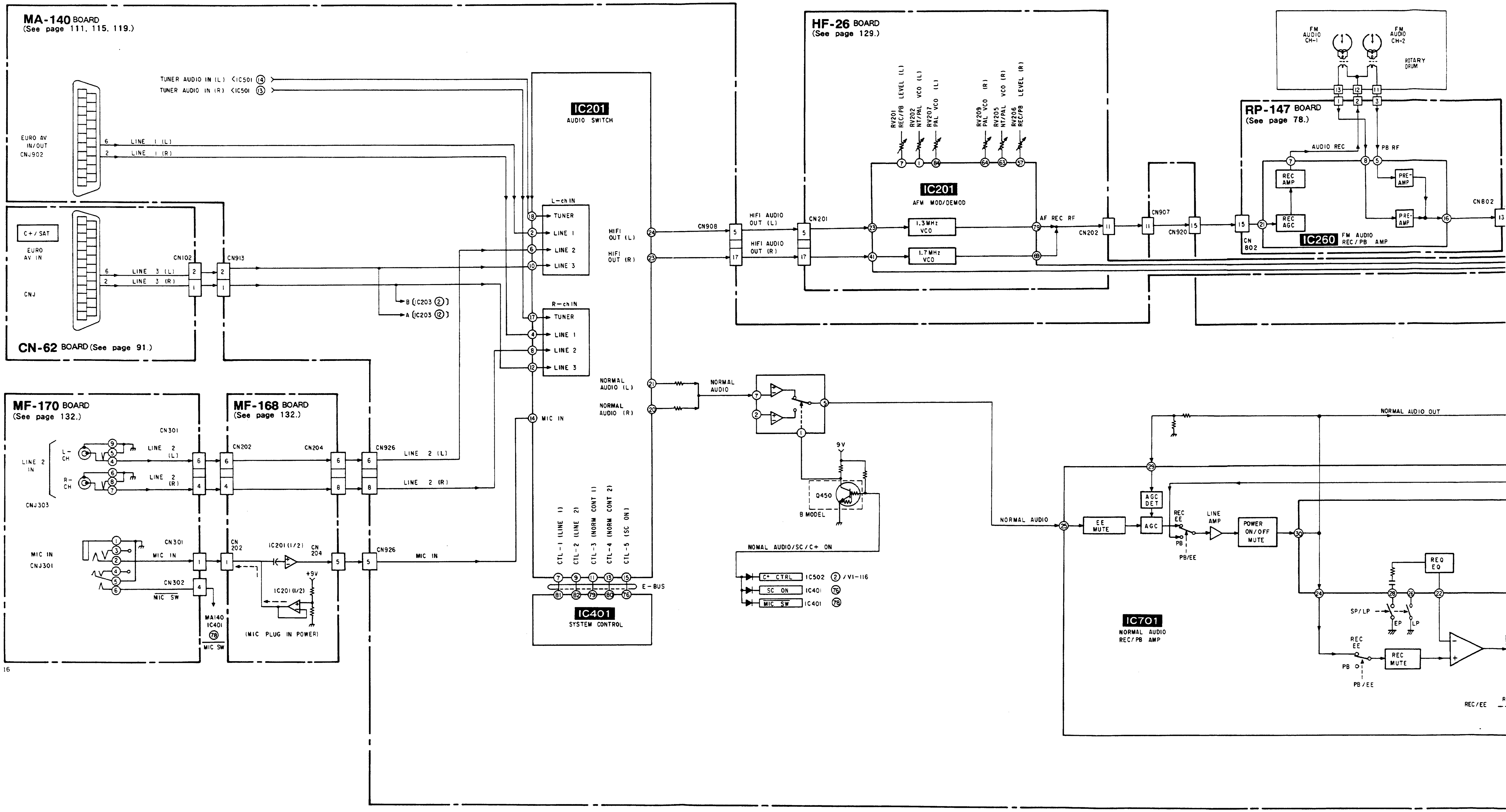
Signal \ Input	Tuner	LINE 1	LINE 2
LINE 1	L	H	L
LINE 2	L	L	H

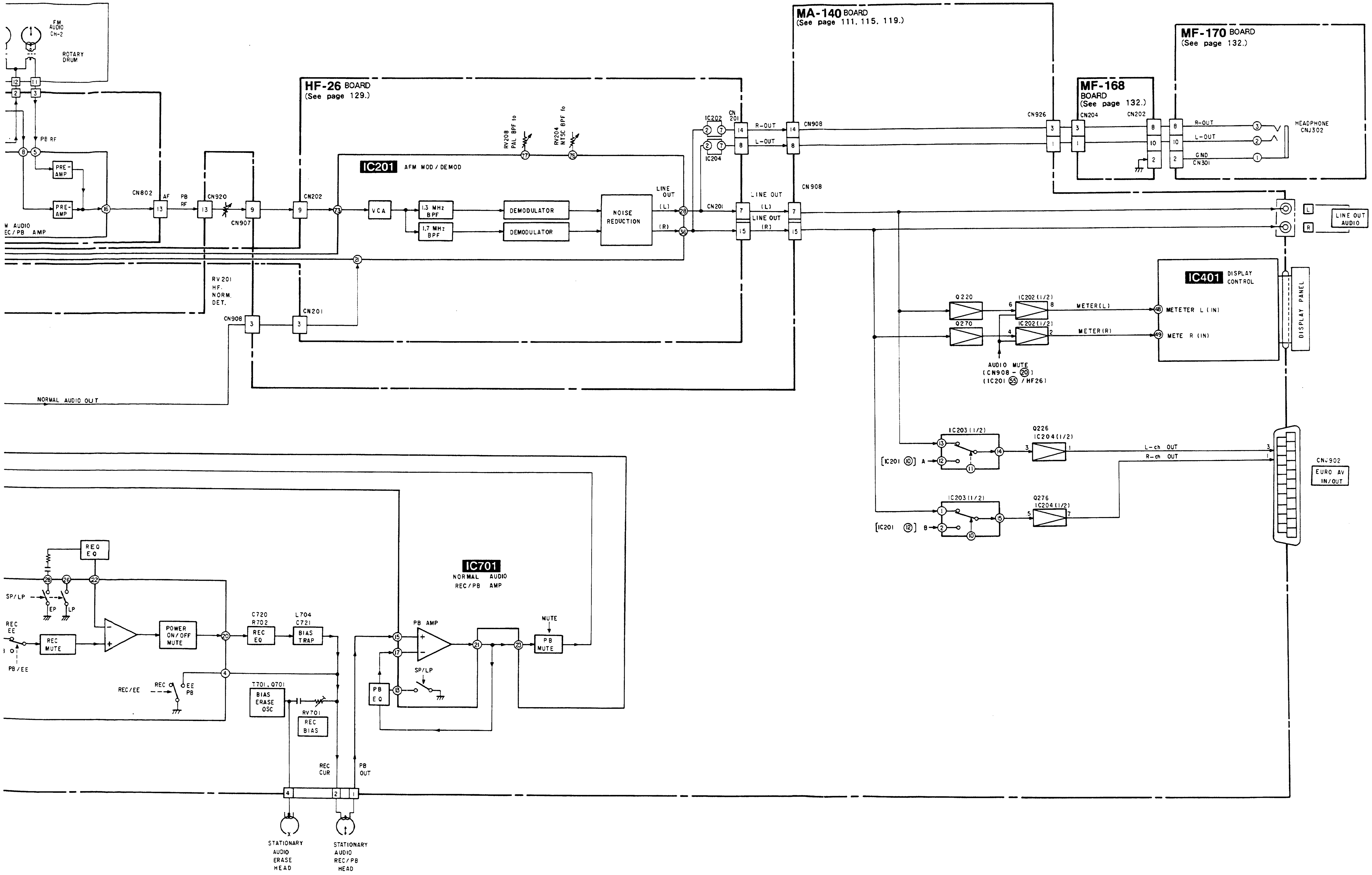
3-15. SYSTEM CONTROL —DIGITAL CONTROL BLOCK INTERFACE—

- **IC401 on MA-140 board.**

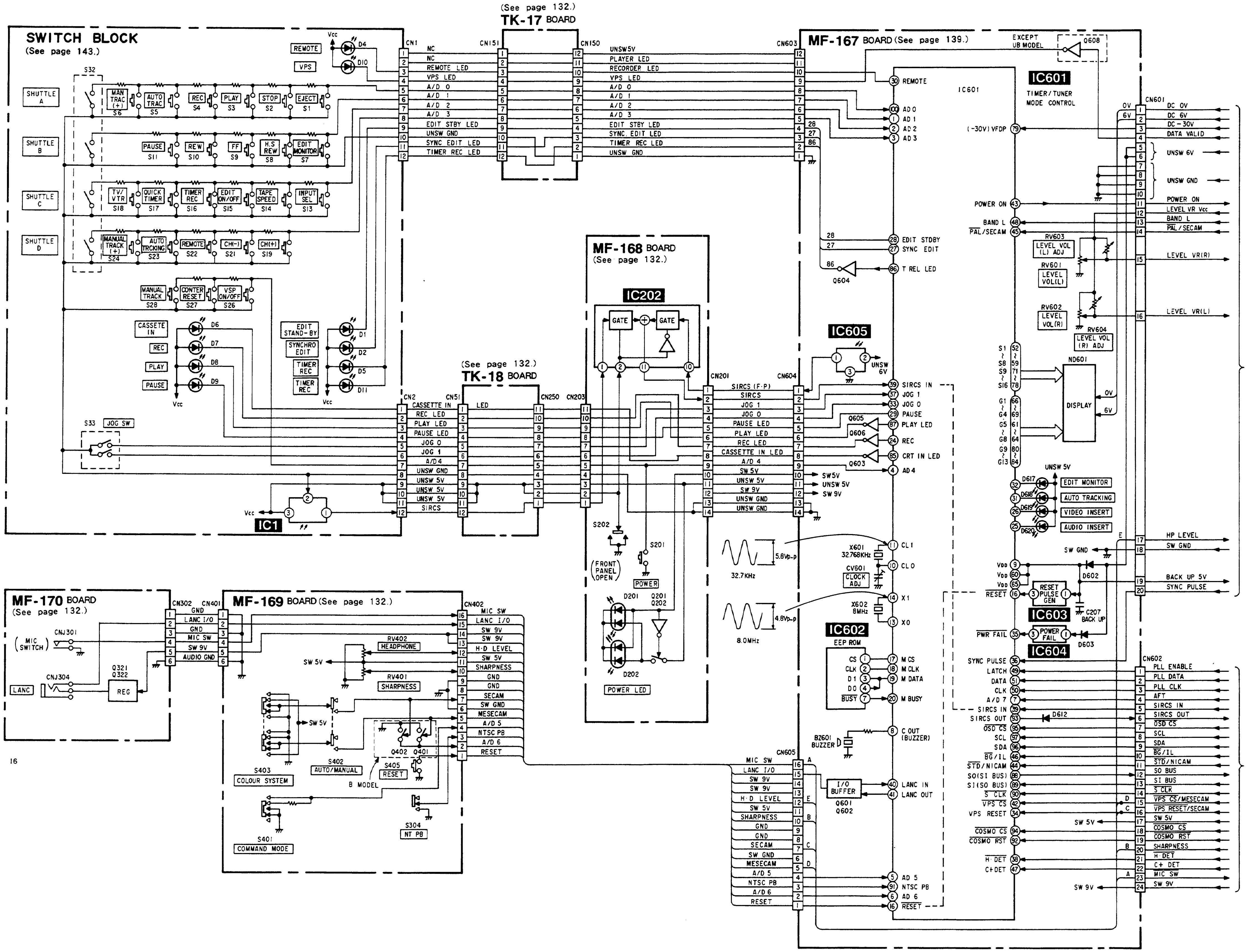
Signal	Pin No.	Input/output level
Pin P ON	21	"H" during digital ON
Pin P PC	20	"H" when when parent picture : EE , child picture : PB with PINP.
Pin P SHIFT	22	H pulse during child picture shifting
Pin P Edit	24	"H" during edit monitor
Pin P Mute	26	"H" when right side picture mute during edit monitor mode
Pin L Mute	25	"H" when left side picture mute during edit monitor mode
Pin Still	23	"H" when right side picture is still picture during edit monitor mode.

3 -16. AUDIO BLOCK DIAGRAM


MA-140 BOARD
(See page 111, 115, 119.)
TUNER AUDIO IN (L) <IC501 ⑭
TUNER AUDIO IN (R) <IC501 ⑬
EURO AV IN/OUT CNJ902
6 LINE 1 (L)
2 LINE 1 (R)
IC201 AUDIO SWITCH
L-ch IN
⑱ TUNER
② LINE 1
⑥ LINE 2
⑩ LINE 3
R-ch IN
⑰ TUNER
④ LINE 1
⑧ LINE 2
⑫ LINE 3
⑭ MIC IN
HIFI OUT (L) ㉔
HIFI OUT (R) ㉓
NORMAL AUDIO (L) ㉑
NORMAL AUDIO (R) ⑳
CTL-1 (LINE 1)
CTL-2 (LINE 2)
CTL-3 (NORM CONT 1)
CTL-4 (NORM CONT 2)
CTL-5 (SC ON)
⑦ ⑨ ⑪ ⑬ ⑮
E-BUS
(81) (82) (79) (80) (76)
IC401 SYSTEM CONTROL
C+/SAT
EURO AV IN
CNJ
6 LINE 3 (L)
2 LINE 3 (R)
CN102
CN913
B (IC203 ②)
A (IC203 ⑫)
CN-62 BOARD (See page 91.)
MF-170 BOARD
(See page 132.)
CN301
LINE 2 IN
L-CH
R-CH
LINE 2 (L)
LINE 2 (R)
CNJ303
MIC IN
CNJ301
CN301
MIC IN
CN302
MIC SW
MA140 IC401 (78)
MIC SW
MF-168 BOARD
(See page 132.)
CN202
CN204
CN 202
IC201 (1/2)
CN 204
+9V
IC201 (1/2)
(MIC PLUG IN POWER)
CN926
LINE 2 (L)
LINE 2 (R)
CN926
MIC IN
16
CN908
HIFI AUDIO OUT (L)
HIFI AUDIO OUT (R)
HF-26 BOARD
(See page 129.)
CN201
RV201 REC/PB LEVEL (L)
RV202 NT/PAL VCO (L)
RV207 PAL VCO (L)
RV209 PAL VCO (R)
RV205 NT/PAL VCO (R)
RV206 REC/PB LEVEL (R)
⑦ ① (84) (64) (63) (57)
IC201 AFM MOD/DEMOD
㉓ 1.3MHz VCO
(41) 1.7MHz VCO
(79) AF REC RF
(69)
CN202
CN907
CN920
FM AUDIO CH-1
FM AUDIO CH-2
ROTARY DRUM
13 12 11
1 2 3
RP-147 BOARD
(See page 78.)
AUDIO REC
PB RF
REC AMP
REC AGC
PRE-AMP
PRE-AMP
CN 802
IC260 FM AUDIO REC/PB AMP
CN802
NORMAL AUDIO
NORMAL AUDIO
Q450
B MODEL
9V
NOMAL AUDIO/SC/C+ ON
C+ CTRL IC502 ② /VI-116
SC ON IC401 (76)
MIC SW IC401 (78)
NORMAL AUDIO OUT
NORMAL AUDIO
EE MUTE
AGC DET
AGC
REC EE
PB
PB/EE
LINE AMP
POWER ON/OFF MUTE
REQ EQ
SP/LP
EP
LP
REC EE
PB
PB/EE
REC MUTE
REC/EE
IC701 NORMAL AUDIO REC/PB AMP

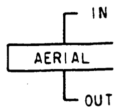

FM AUDIO CH-2
ROTARY DRUM
PB RF
PRE-AMP
PRE-AMP
M AUDIO REC/PB AMP
CN802
AF
PB RF
CN920
CN907
RV201 HF. NORM. DET.
CN908
NORMAL AUDIO OUT
HF-26 BOARD
(See page 129.)
IC201 AFM MOD/DEMOD
RV208 PAL BPF fo
RV204 NTSC BPF fo
CN202
VCA
1.3 MHz BPF
1.7 MHz BPF
DEMODULATOR
DEMODULATOR
NOISE REDUCTION
LINE OUT (L) (R)
CN201
IC202
IC204
CN 201
R-OUT
L-OUT
LINE OUT (L)
LINE OUT (R)
MA-140 BOARD
(See page 111, 115, 119.)
CN908
CN926
MF-168 BOARD
(See page 132.)
CN204
CN202
MF-170 BOARD
(See page 132.)
R-OUT
L-OUT
GND
CN301
HEADPHONE CNJ302
LINE OUT AUDIO
L
R
IC401 DISPLAY CONTROL
DISPLAY PANEL
Q220
Q270
IC202(1/2)
IC202(1/2)
METER(L)
METER(R)
METETER L (IN)
METE R (IN)
AUDIO MUTE (CN908 - ⑳) (IC201 55 / HF26)
IC203(1/2)
Q226 IC204(1/2)
[IC201 ⑩] A
IC203(1/2)
Q276 IC204(1/2)
[IC201 ⑫] B
L-ch OUT
R-ch OUT
CNJ902
EURO AV IN/OUT
REQ EQ
SP/LP
EP
LP
REC EE
PB/EE
REC MUTE
POWER ON/OFF MUTE
C720 R702
REC EQ
L704 C721
BIAS TRAP
REC/EE
REC
EE
PB
T701, Q701
BIAS ERASE OSC
RV701
REC BIAS
IC701 NORMAL AUDIO REC/PB AMP
PB AMP
SP/LP
PB EQ
MUTE
PB MUTE
REC CUR
PB OUT
STATIONARY AUDIO ERASE HEAD
STATIONARY AUDIO REC/PB HEAD

3-17. TIMER TUNER, MODE CONTROL BLOCK DIAGRAM


SWITCH BLOCK
(See page 143.)
SHUTTLE A
SHUTTLE B
SHUTTLE C
SHUTTLE D
S32
MAN TRAC (+) S6
AUTO TRAC S5
REC S4
PLAY S3
STOP S2
EJECT S1
PAUSE S11
REW S10
FF S9
H.S REW S8
EDIT MONITOR S7
TV/VTR S18
QUICK TIMER S17
TIMER REC S16
EDIT ON/OFF S15
TAPE SPEED S14
INPUT SEL S13
MANUAL TRACK (+) S24
AUTO TRCKING S23
REMOTE S22
CH(-) S21
CH(+) S19
MANUAL TRACK S28
COUNTER RESET S27
VSP ON/OFF S26
REMOTE
VPS
D4
D10
CASSETTE IN D6
REC D7
PLAY D8
PAUSE D9
EDIT STAND-BY D1
SYNCHRO EDIT D2
TIMER REC D5
TIMER REC D11
Vcc
S33 JOG SW
IC1
CN1
NC
NC
REMOTE LED
VPS LED
A/D 0
A/D 1
A/D 2
A/D 3
EDIT STBY LED
UNSW GND
SYNC EDIT LED
TIMER REC LED
(See page 132.)
TK-17 BOARD
CN151
CN150
UNSW5V
PLAYER LED
RECORDER LED
VPS LED
A/D 0
A/D 1
A/D 2
A/D 3
EDIT STBY LED
SYNC EDIT LED
TIMER REC LED
UNSW GND
CN603
MF-167 BOARD (See page 139.)
EXCEPT UB MODEL
Q608
IC601
TIMER/TUNER MODE CONTROL
REMOTE
AD 0
AD 1
AD 2
AD 3
(-30V) VFDP
POWER ON
BAND L
PAL/SECAM
EDIT STDBY
SYNC EDIT
T REL LED
Q604
RV603 LEVEL VOL (L) ADJ
RV601 LEVEL VOL(L)
RV602 LEVEL VOL(R)
RV604 LEVEL VOL (R) ADJ
ND601
DISPLAY
0V
6V
CN601
DC 0V
DC 6V
DC -30V
DATA VALID
UNSW 6V
UNSW GND
POWER ON
LEVEL VR Vcc
BAND L
PAL/SECAM
LEVEL VR(R)
LEVEL VR(L)
MA-140 (CN904)
MF-168 BOARD
(See page 132.)
IC202
GATE
GATE
S202
(FRONT PANEL OPEN)
S201
POWER
D201
Q201
Q202
D202
POWER LED
(See page 132.)
TK-18 BOARD
CN2
CN51
LED
CN250
CN203
CASSETTE IN
REC LED
PLAY LED
PAUSE LED
JOG 0
JOG 1
A/D4
UNSW GND
UNSW 5V
UNSW 5V
UNSW 5V
SIRCS
CN201
CN604
SIRCS (F-P)
SIRCS
JOG 1
JOG 0
PAUSE LED
PLAY LED
REC LED
CASSETTE IN LED
A/D 4
SW 5V
UNSW 5V
SW 9V
UNSW GND
UNSW GND
IC605
UNSW 6V
SIRCS IN
JOG 1
JOG 0
PAUSE
PLAY LED
REC
CRT IN LED
AD 4
Q605
Q606
Q603
SW5V
UNSW 5V
SW 9V
S1 ~ S8
S9 ~ S16
G1 ~ G4
G5 ~ G8
G9 ~ G13
UNSW 5V
D617 EDIT MONITOR
D618 AUTO TRACKING
D619 VIDEO INSERT
D620 AUDIO INSERT
HP LEVEL
SW GND
BACK UP 5V
SYNC PULSE
X601 32.768KHz
CV601 CLOCK ADJ
X602 8MHz
5.8Vp-p
32.7KHz
4.8Vp-p
8.0MHz
CL1
CL0
X1
X0
Vdd
RESET
IC603 RESET PULSE GEN
D602
C207 BACK UP
PWR FAIL
IC604 POWER FAIL
D603
IC602
EEP ROM
CS
CLK
DI
DO
BUSY
M CS
M CLK
M DATA
M BUSY
BZ601 BUZZER
C OUT (BUZZER)
I/O BUFFER
Q601
Q602
LANC IN
LANC OUT
AD 5
NTSC PB
AD 6
RESET
SYNC PULSE
LATCH
DATA
CLK
A/D 7
SIRCS IN
SIRCS OUT
D612
OSD CS
SCL
SDA
BG/IL
STD/NICAM
SO(SI BUS)
SI(SO BUS)
S CLK
VPS CS
VPS RESET
COSMO CS
COSMO RST
H DET
C+DET
SW 5V
SW 9V
CN602
PLL ENABLE
PLL DATA
PLL CLK
AFT
SIRCS IN
SIRCS OUT
OSD CS
SCL
SDA
BG/IL
STD/NICAM
SO BUS
SI BUS
S CLK
VPS CS/MESECAM
VPS RESET/SECAM
SW 5V
COSMO CS
COSMO RST
SHARPNESS
H DET
C+ DET
MIC SW
SW 9V
MA-140 (CN905)
CN605
MIC SW
LANC I/O
SW 9V
SW 9V
H-D LEVEL
SW 5V
SHARPNESS
GND
GND
SECAM
SW GND
MESECAM
A/D 5
NTSC PB
A/D 6
RESET
MF-170 BOARD
(See page 132.)
CNJ301
(MIC SWITCH)
CNJ304
LANC
Q321
Q322
REG
CN302
CN401
GND
LANC I/O
GND
MIC SW
SW 9V
AUDIO GND
MF-169 BOARD (See page 132.)
CN402
MIC SW
LANC I/O
SW 9V
SW 9V
H-D LEVEL
SW 5V
SHARPNESS
GND
GND
SECAM
SW GND
MESECAM
A/D 5
NTSC PB
A/D 6
RESET
RV402 HEADPHONE
RV401 SHARPNESS
SW 5V
S403 COLOUR SYSTEM
S402 AUTO/MANUAL
Q402
Q401
S405 RESET
B MODEL
S401 COMMAND MODE
S304 NT PB

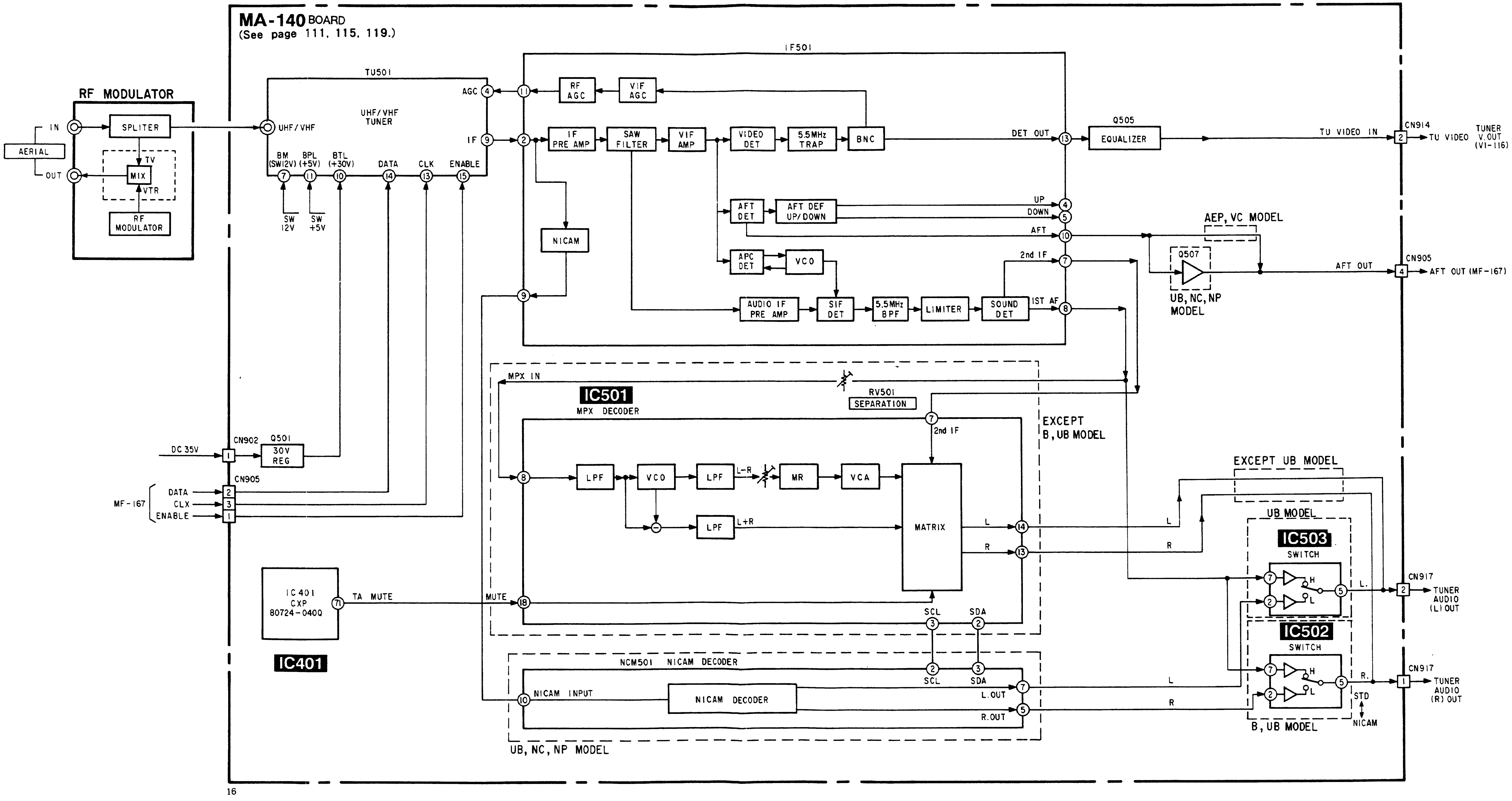
16

3-18. TUNE

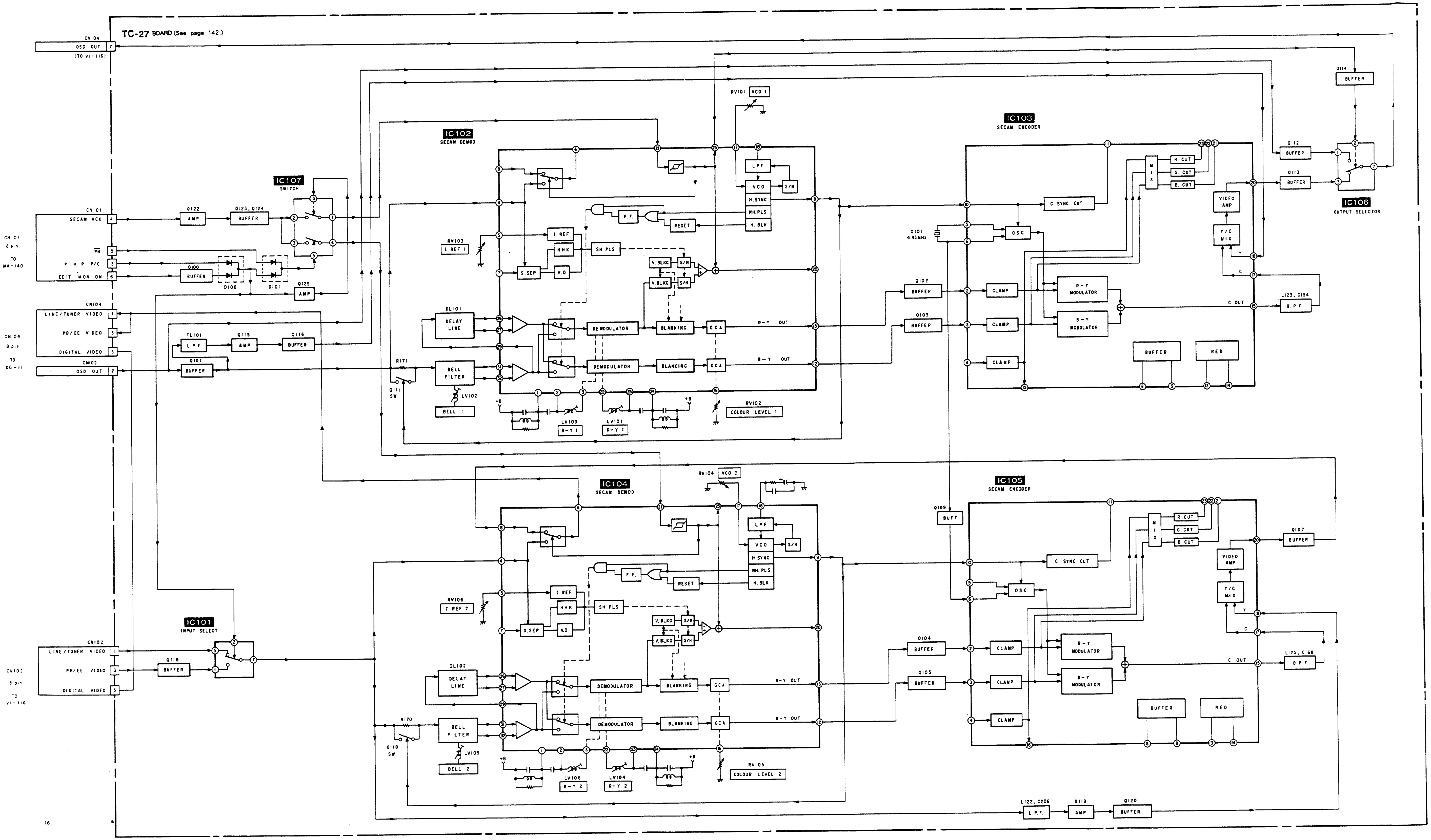

IN
AERIAL
OUT

MC-Service

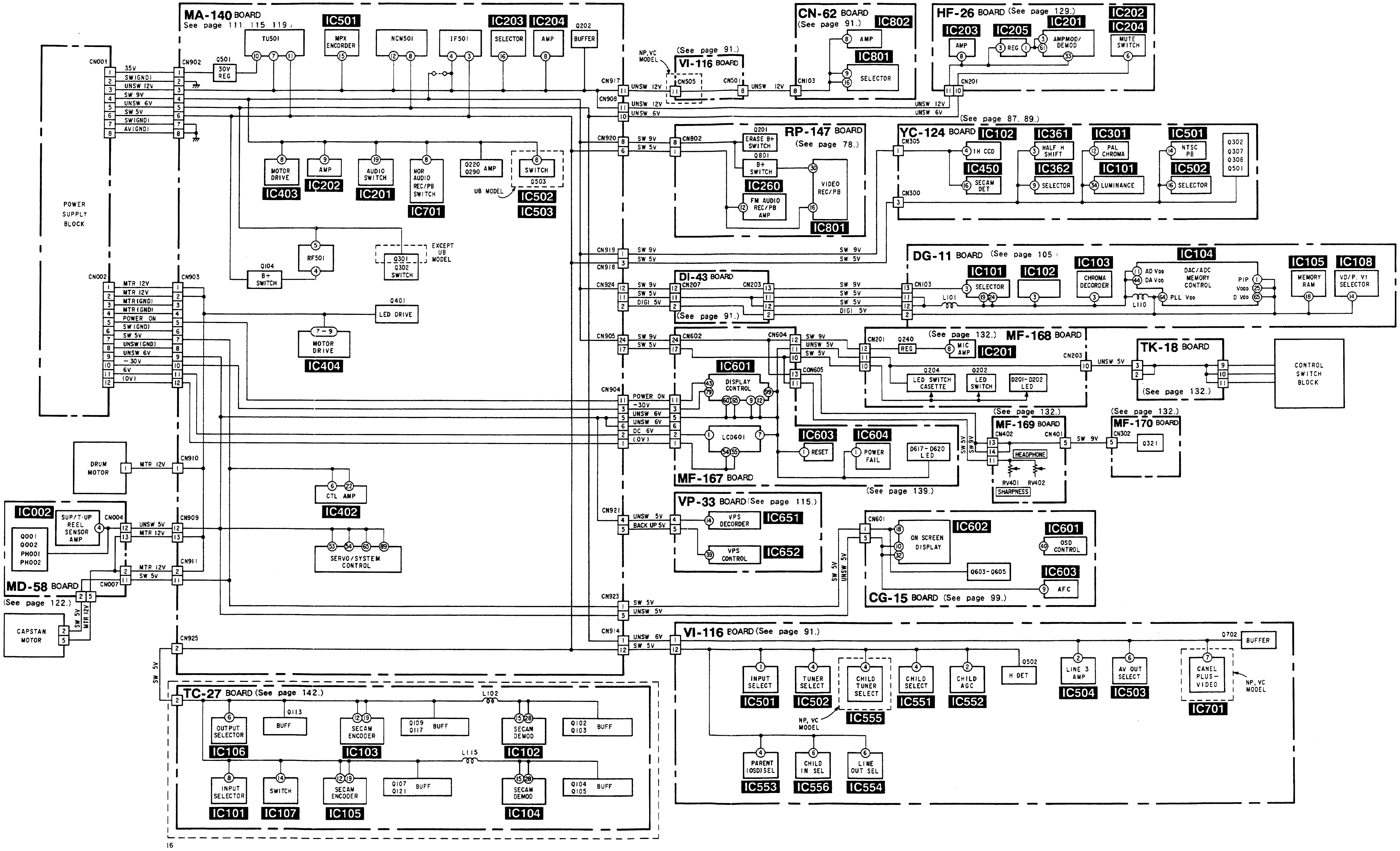
3-18. TUNER NICAM BLOCK DIAGRAM


MA-140 BOARD
(See page 111, 115, 119.)
RF MODULATOR
AERIAL
IN
OUT
SPLITER
TV
MIX
VTR
RF MODULATOR
TU501
UHF/VHF TUNER
UHF/VHF
AGC
IF
BM (SW12V)
BPL (+5V)
BTL (+30V)
DATA
CLK
ENABLE
SW 12V
SW +5V
IF501
RF AGC
VIF AGC
IF PRE AMP
SAW FILTER
VIF AMP
VIDEO DET
5.5MHz TRAP
BNC
DET OUT
Q505
EQUALIZER
TU VIDEO IN
CN914
TU VIDEO
TUNER V.OUT (VI-116)
NICAM
AFT DET
AFT DEF UP/DOWN
UP
DOWN
AFT
APC DET
VCO
2nd IF
AUDIO IF PRE AMP
SIF DET
5.5MHz BPF
LIMITER
SOUND DET
1ST AF
AEP, VC MODEL
Q507
UB, NC, NP MODEL
AFT OUT
CN905
AFT OUT (MF-167)
MPX IN
IC501
MPX DECODER
RV501
SEPARATION
2nd IF
EXCEPT B, UB MODEL
LPF
VCO
LPF
L-R
MR
VCA
LPF
L+R
MATRIX
L
R
MUTE
SCL
SDA
DC 35V
CN902
Q501
30V REG
CN905
MF-167
DATA
CLX
ENABLE
IC401 CXP 80724-040Q
TA MUTE
IC401
EXCEPT UB MODEL
UB MODEL
IC503
SWITCH
H
L
IC502
SWITCH
CN917
TUNER AUDIO (L) OUT
TUNER AUDIO (R) OUT
STD
NICAM
B, UB MODEL
NCM501 NICAM DECODER
NICAM INPUT
NICAM DECODER
L.OUT
R.OUT
UB, NC, NP MODEL
16

3-19. TRANSCODER BLOCK DIAGRAM (B Model)


TC-27 BOARD (See page 142.)
CN104
OSD OUT
(TO VI-116)
CN101
SECAM ACK
PB
P in P P/C
EDIT MON ON
CN101
8 pin
TO
MA-140
CN104
LINE/TUNER VIDEO
PB/EE VIDEO
DIGITAL VIDEO
CN104
8 pin
TO
DC-11
CN102
OSD OUT
IC107
SWITCH
Q122
AMP
Q123, Q124
BUFFER
Q100
BUFFER
D100
D101
Q125
AMP
FL101
L.P.F.
Q115
AMP
Q116
BUFFER
Q101
BUFFER
R171
Q111
SW
IC102
SECAM DEMOD
RV101
VCO 1
RV103
I REF 1
I REF
HHK
S.SEP
V.D
SH PLS
F.F.
RESET
LPF
VCO
S/H
H.SYNC
NH.PLS
H.BLK
V.BLKG
S/H
DL101
DELAY LINE
BELL FILTER
LV102
BELL 1
DEMODULATOR
BLANKING
GCA
R-Y OUT
B-Y OUT
+B
LV103
B-Y 1
LV101
R-Y 1
RV102
COLOUR LEVEL 1
IC103
SECAM ENCODER
X101
4.43MHz
OSC
C.SYNC CUT
MIX
R.CUT
G.CUT
B.CUT
VIDEO AMP
Y/C MIX
Y
C
C.OUT
Q102
BUFFER
Q103
BUFFER
CLAMP
R-Y MODULATOR
B-Y MODULATOR
BUFFER
RED
L123, C154
B.P.F
Q114
BUFFER
Q112
BUFFER
Q113
BUFFER
IC106
OUTPUT SELECTOR
IC104
SECAM DEMOD
RV104
VCO 2
RV106
I REF 2
DL102
DELAY LINE
R170
Q110
SW
BELL FILTER
LV105
BELL 2
LV106
B-Y 2
LV104
R-Y 2
RV105
COLOUR LEVEL 2
IC101
INPUT SELECT
CN102
LINE/TUNER VIDEO
PB/EE VIDEO
DIGITAL VIDEO
CN102
8 pin
TO
VI-116
Q118
BUFFER
IC105
SECAM ENCODER
Q109
BUFF
Q104
BUFFER
Q105
BUFFER
Q107
BUFFER
L125, C168
B.P.F.
L122, C206
L.P.F.
Q119
AMP
Q120
BUFFER
16

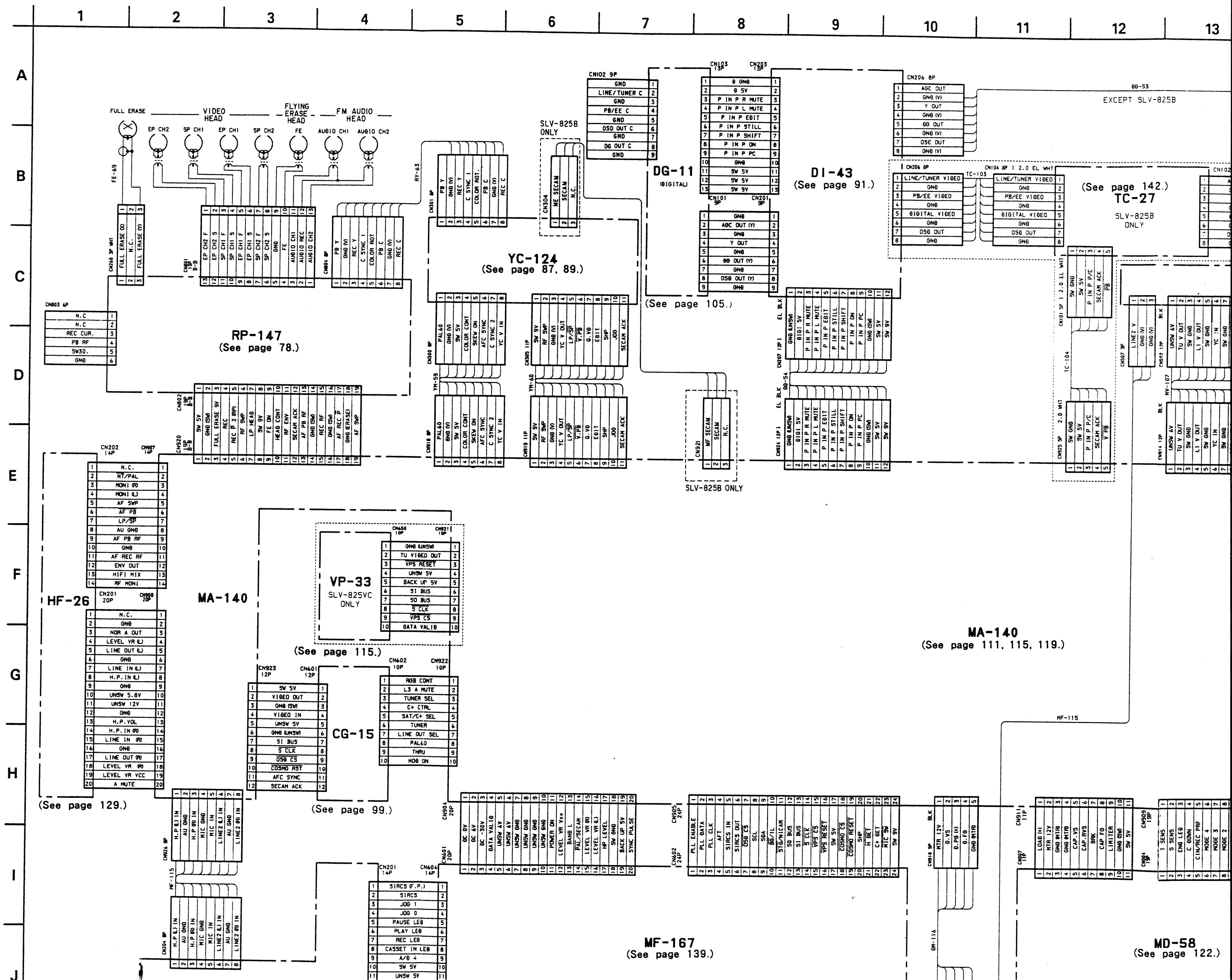
3-20. POWER SUPPLY BLOCK DIAGRAM


MA-140 BOARD See page 111, 115, 119
POWER SUPPLY BLOCK
CN001
35V
SW(GND)
UNSW 12V
SW 9V
UNSW 6V
SW 5V
SW(GND)
AV(GND)
CN002
MTR 12V
MTR 12V
MTR(GND)
MTR(GND)
POWER ON
SW(GND)
SW 5V
UNSW(GND)
UNSW 6V
-30V
6V
(0V)
CN902
CN903
Q501 30V REG
TU501
MPX ENCORDER
NCM501
IF501
SELECTOR
AMP
Q202 BUFFER
IC501
IC203
IC204
MOTOR DRIVE
IC403
AMP
IC202
AUDIO SWITCH
IC201
NOR AUDIO REC/PB SWITCH
IC701
Q220 Q290 AMP
SWITCH Q503
UB MODEL
IC502
IC503
RF501
Q104 B+ SWITCH
Q301 Q302 SWITCH
EXCEPT UB MODEL
Q401 LED DRIVE
MOTOR DRIVE
IC404
DRUM MOTOR
MTR 12V
CN910
CTL AMP
IC402
SERVO/SYSTEM CONTROL
IC002
SUP/T-UP REEL SENSOR AMP
Q001 Q002 PH001 PH002
CN004
UNSW 5V
MTR 12V
CN909
MD-58 BOARD
CN007
CN911
(See page 122.)
CAPSTAN MOTOR
SW 5V
MTR 12V
CN925
TC-27 BOARD (See page 142.)
OUTPUT SELECTOR
IC106
Q113 BUFF
SECAM ENCODER
IC103
Q109 Q117 BUFF
L102
SECAM DEMOD
IC102
Q102 Q103 BUFF
L115
INPUT SELECTOR
IC101
SWITCH
IC107
SECAM ENCODER
IC105
Q107 Q121 BUFF
SECAM DEMOD
IC104
Q104 Q105 BUFF
CN917
CN908
UNSW 12V
UNSW 6V
NP, VC MODEL
VI-116 BOARD (See page 91.)
CN505
CN501
CN-62 BOARD (See page 91.)
IC802
AMP
IC801
SELECTOR
CN103
HF-26 BOARD (See page 129.)
IC203
AMP
IC205
REG
IC201
AMPMOD/DEMOD
IC202
IC204
MUTE SWITCH
CN201
(See page 87, 89.)
CN920
SW 9V
SW 5V
RP-147 BOARD (See page 78.)
CN802
Q201 ERASE B+ SWITCH
Q801 B+ SWITCH
IC260
FM AUDIO REC/PB AMP
VIDEO REC/PB
IC801
YC-124 BOARD
CN305
IC102
1H CCD
IC361
HALF H SHIFT
IC301
PAL CHROMA
IC501
NTSC PB
Q302 Q307 Q308 Q501
IC450
SECAM DET
IC362
SELECTOR
IC101
LUMINANCE
IC502
SELECTOR
CN300
CN919
CN918
DG-11 BOARD (See page 105)
IC103
CHROMA DECORDER
IC104
AD VDD
DA VDD
DAC/ADC MEMORY CONTROL
PLL VDD
PIP VDD
D VDD
IC105
MEMORY RAM
IC108
VD/P. V1 SELECTOR
IC101
SELECTOR
IC102
L101
L110
CN924
DI-43 BOARD
CN207
CN203
DIGI 5V
(See page 91.)
CN905
CN602
CN604
CN201
Q240 REG
(See page 132.)
MF-168 BOARD
MIC AMP
IC201
CN203
Q204 LED SWITCH CASETTE
Q202 LED SWITCH
D201-D202 LED
TK-18 BOARD
(See page 132.)
CONTROL SWITCH BLOCK
CN904
POWER ON
-30V
UNSW 6V
UNSW 6V
DC 6V
(0V)
IC601
DISPLAY CONTROL
LCD601
CN605
IC603
RESET
IC604
POWER FAIL
D617-D620 LED
MF-167 BOARD
MF-169 BOARD
CN402
CN401
HEADPHONE
RV401 RV402
SHARPNESS
(See page 139.)
MF-170 BOARD
CN302
Q321
CN921
UNSW 5V
BACK UP 5V
VP-33 BOARD (See page 115.)
VPS DECORDER
IC651
VPS CONTROL
IC652
CN601
ON SCREEN DISPLAY
IC602
IC601
OSD CONTROL
Q603-Q605
IC603
AFC
CG-15 BOARD (See page 99.)
CN923
CN914
VI-116 BOARD (See page 91.)
INPUT SELECT
IC501
TUNER SELECT
IC502
CHILD TUNER SELECT
IC555
NP, VC MODEL
CHILD SELECT
IC551
CHILD AGC
IC552
Q502 H DET
LINE 3 AMP
IC504
AV OUT SELECT
IC503
CANEL PLUS-VIDEO
IC701
NP, VC MODEL
Q702 BUFFER
PARENT (OSD) SEL
IC553
CHILD IN SEL
IC556
LINE OUT SEL
IC554
16

SECTION 4

PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

4-1. FRAME SCHEMATIC DIAGRAM



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12
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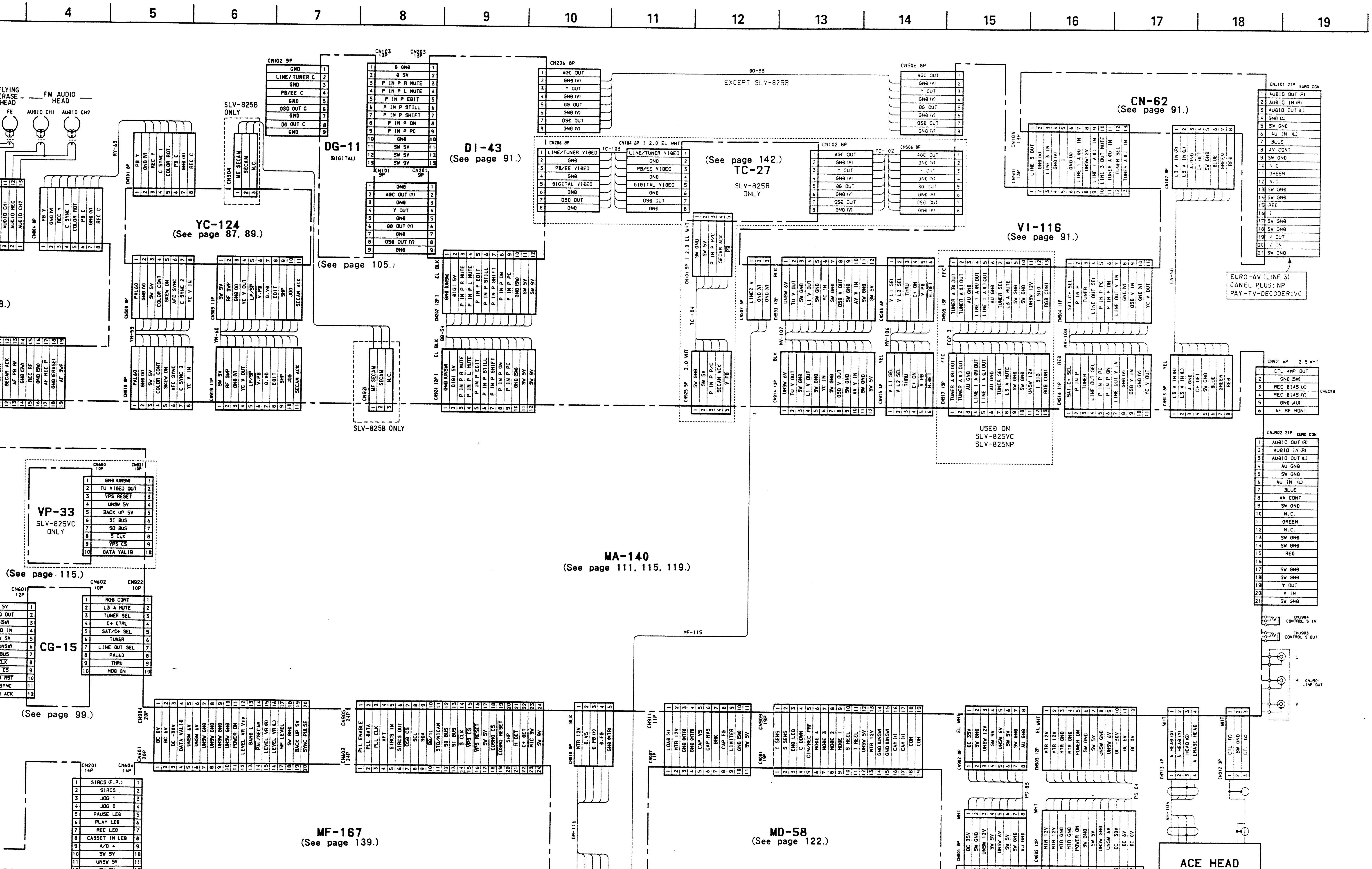
A
B
C
D
E
F
G
H
I
J
FULL ERASE
VIDEO HEAD
FLYING ERASE HEAD
FM AUDIO HEAD
EP CH2
SP CH1
EP CH1
SP CH2
FE
AUDIO CH1
AUDIO CH2
SLV-825B ONLY
DG-11
(DIGITAL)
DI-43
(See page 91.)
(See page 142.)
TC-27
SLV-825B ONLY
EXCEPT SLV-825B
YC-124
(See page 87, 89.)
(See page 105.)
RP-147
(See page 78.)
SLV-825B ONLY
HF-26
MA-140
VP-33
SLV-825VC ONLY
(See page 115.)
CG-15
(See page 99.)
(See page 129.)
MA-140
(See page 111, 115, 119.)
MF-167
(See page 139.)
MD-58
(See page 122.)

N 4

D SCHEMATIC DIAGRAMS


4
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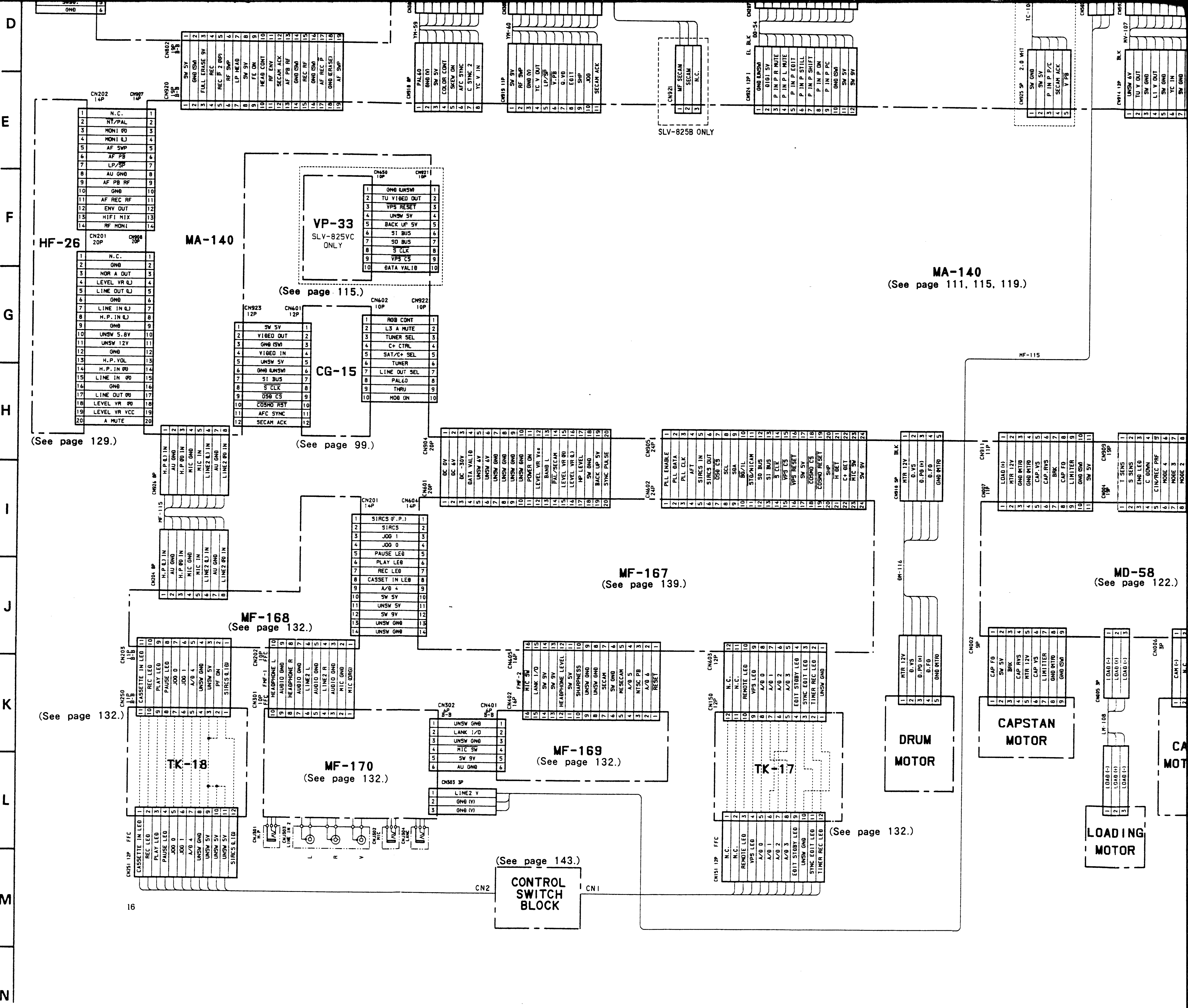
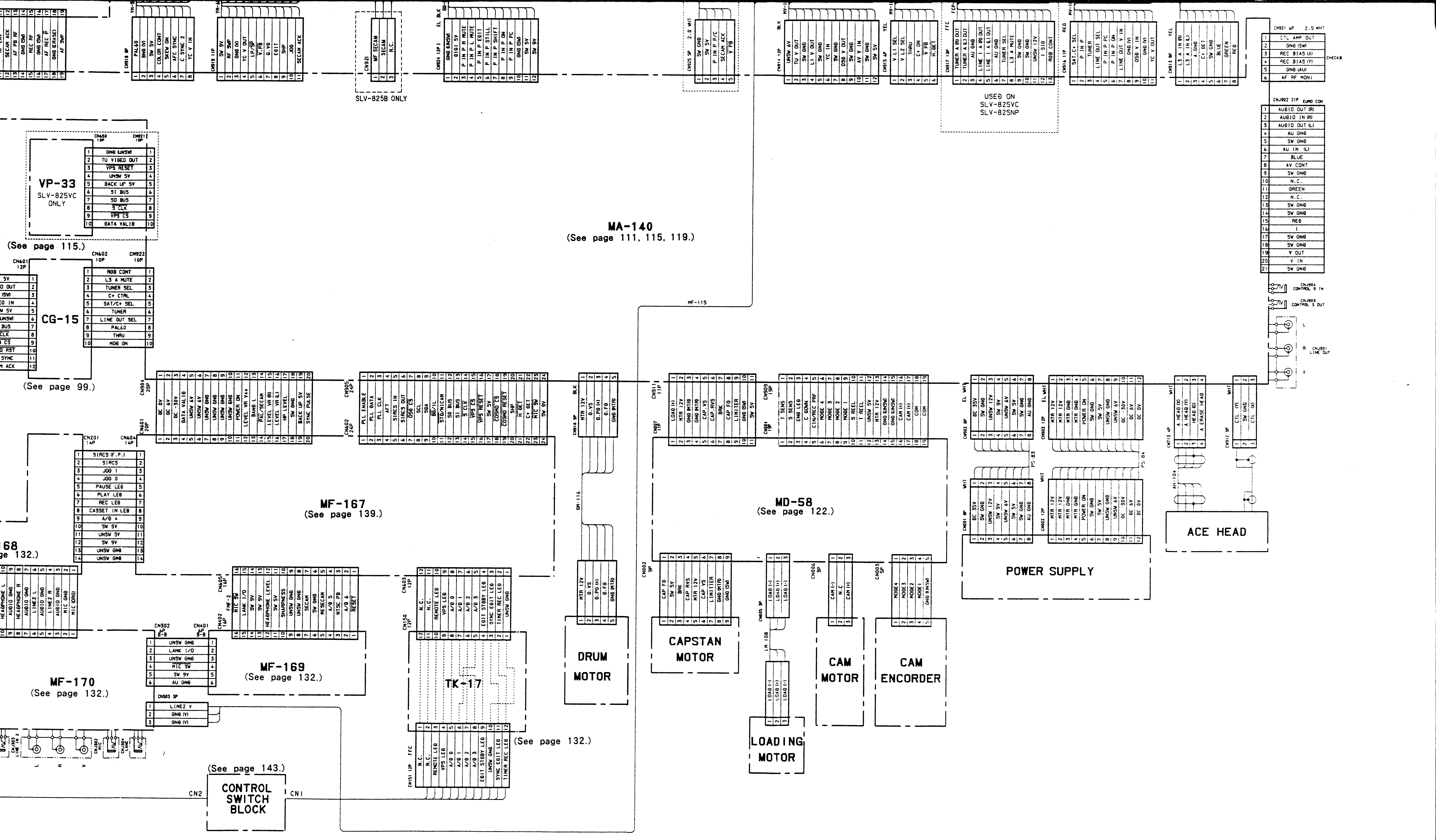
12
13
14
15
16
17
18
19
FLYING ERASE HEAD
FM AUDIO HEAD
FE
AUDIO CH1
AUDIO CH2
SLV-825B ONLY
DG-11
(DIGITAL)
DI-43
(See page 91.)
YC-124
(See page 87, 89.)
(See page 105.)
EXCEPT SLV-825B
(See page 142.)
TC-27
SLV-825B ONLY
CN-62
(See page 91.)
VI-116
(See page 91.)
EURO-AV (LINE 3)
CANEL PLUS: NP
PAY-TV-DECODER: VC
SLV-825B ONLY
USED ON
SLV-825VC
SLV-825NP
VP-33
SLV-825VC ONLY
(See page 115.)
MA-140
(See page 111, 115, 119.)
CG-15
(See page 99.)
MF-115
MF-167
(See page 139.)
MD-58
(See page 122.)
ACE HEAD
CONTROL S IN
CONTROL S OUT
LINE OUT


D
E
F
G
H
I
J
K
L
M
N
HF-26
(See page 129.)
CN202 14P
CN907 14P
CN201 20P
CN908 20P
MA-140
VP-33
SLV-825VC ONLY
(See page 115.)
CN650 10P
CN921 10P
CG-15
(See page 99.)
CN923 12P
CN601 12P
CN602 10P
CN922 10P
CN802 19P
CN920 19P
YM-59
YM-60
CN918 8P
CN919 11P
CN921
SLV-825B ONLY
CN924 12P
CN925 5P
CN914 13P
MA-140
(See page 111, 115, 119.)
MF-115
CN926 8P
CN204 8P
MF-168
(See page 132.)
CN201 14P
CN604 14P
CN904 20P
CN601 20P
CN905 24P
CN602 24P
MF-167
(See page 139.)
DM-116
CN910 5P
CN911 11P
CN907 11P
CN909 13P
MD-58
(See page 122.)
CN203 11P
CN250 11P
CN202 10P
CN301 10P
CN302
CN401
CN405 16P
CN402 16P
MF-169
(See page 132.)
CN603 12P
CN150 12P
(See page 132.)
TK-18
MF-170
(See page 132.)
CN503 3P
TK-17
(See page 132.)
DRUM MOTOR
CN002 9P
CAPSTAN MOTOR
CN005 3P
CN006 3P
LM-108
LOADING MOTOR
CN251 12P FFC
CN151 12P FFC
(See page 143.)
CONTROL SWITCH BLOCK
CN2
CN1
L
R
V
16

FRAME FRAME

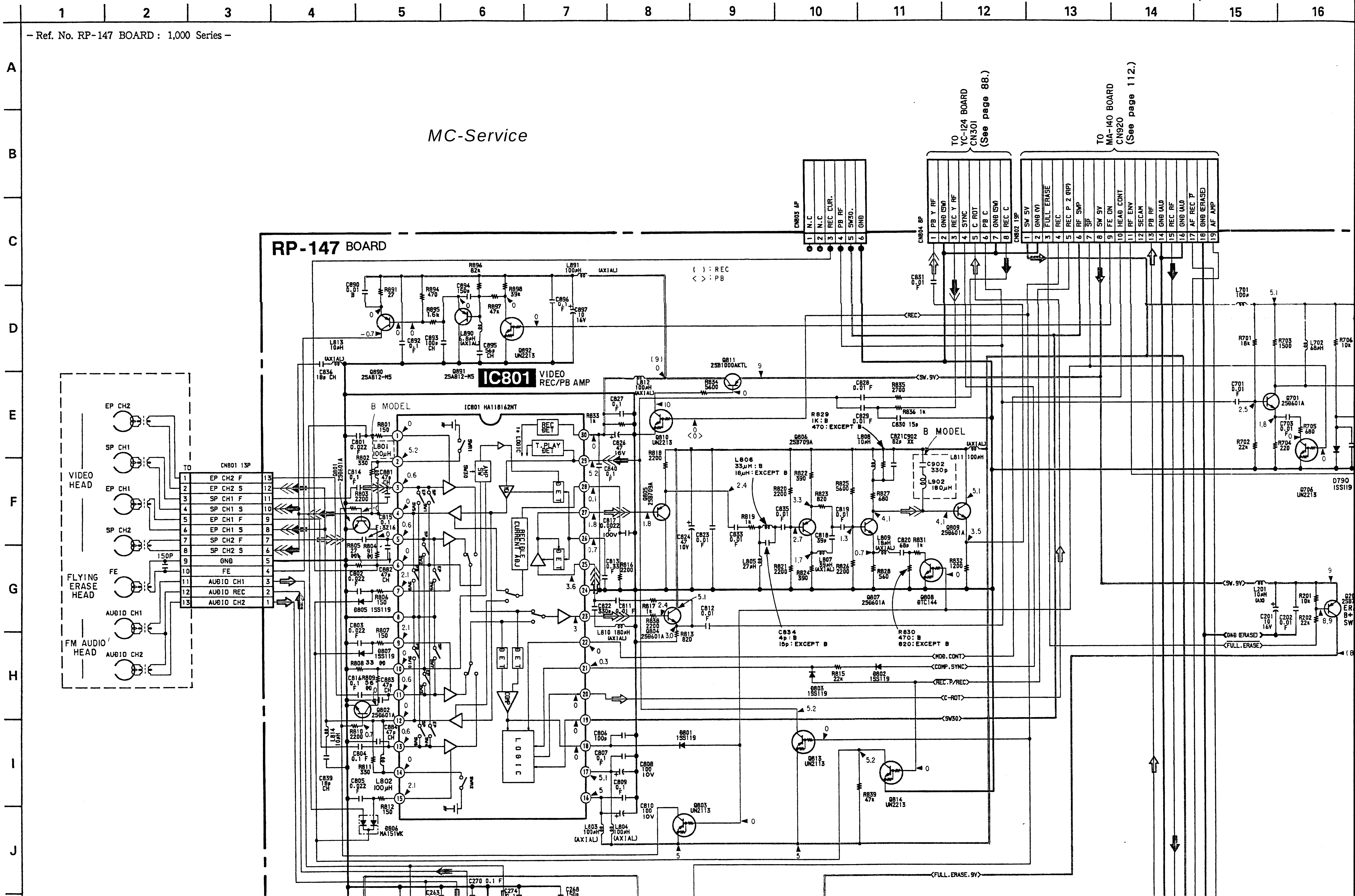

SLV-825B ONLY
USED ON
SLV-825VC
SLV-825NP
VP-33
SLV-825VC
ONLY
(See page 115.)
CG-15
(See page 99.)
MA-140
(See page 111, 115, 119.)
MF-167
(See page 139.)
68
(See page 132.)
MD-58
(See page 122.)
ACE HEAD
POWER SUPPLY
MF-169
(See page 132.)
MF-170
(See page 132.)
TK-17
(See page 132.)
DRUM
MOTOR
CAPSTAN
MOTOR
CAM
MOTOR
CAM
ENCORDER
LOADING
MOTOR
(See page 143.)
CONTROL
SWITCH
BLOCK
CN2
CN1
MF-115
DM-116
LM-108
PS-83
PS-84
AH-104
CN901 6P
CN902 21P
CHECKER
CN901
LINE OUT
L
R
V

MC-Service

4-2. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

RP-147 (HEAD AMP) SCHEMATIC DIAGRAM

– Ref. No. RP-147 BOARD : 1,000 Series –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16
A
B
C
D
E
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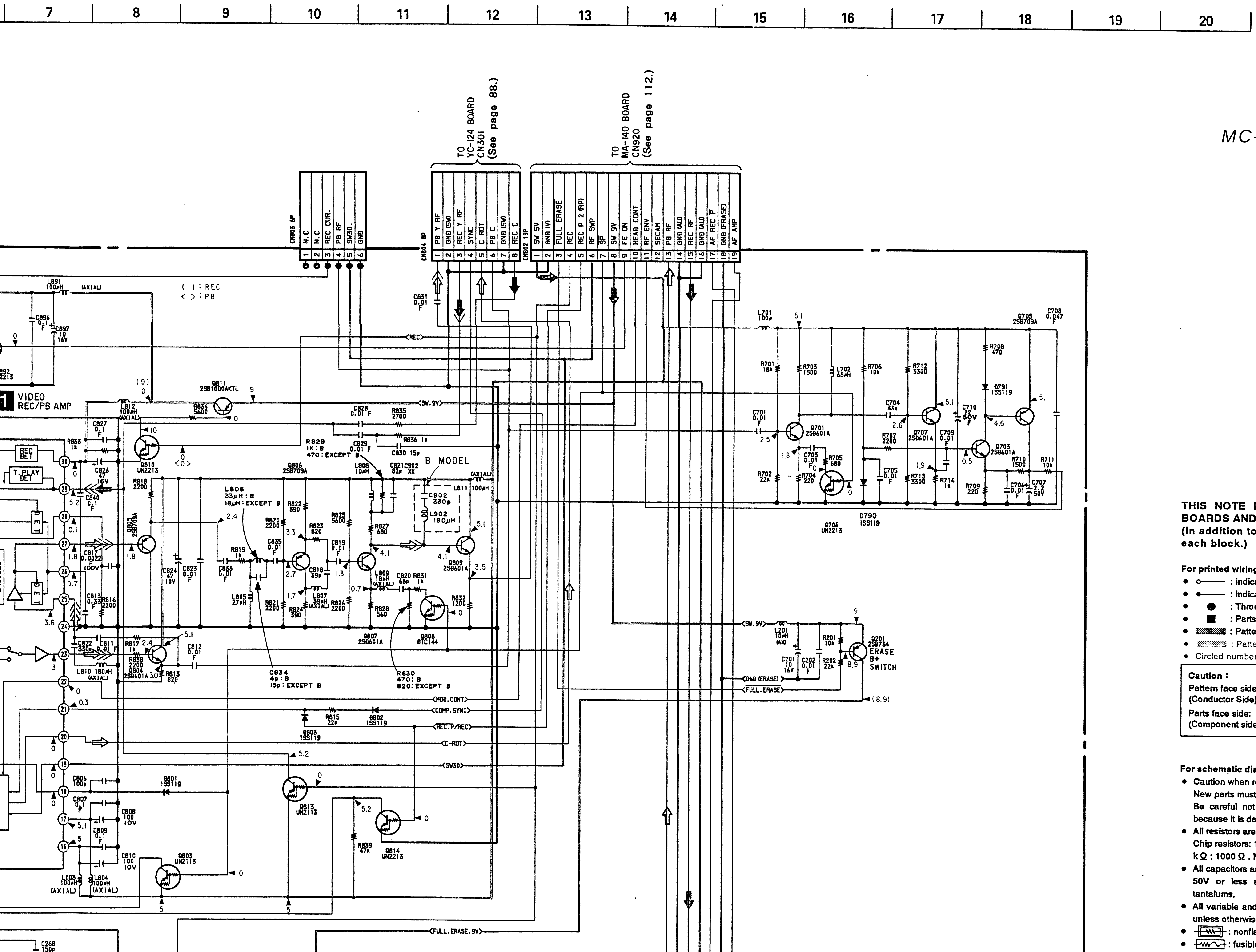
G
H
I
J
RP-147 BOARD
IC801 VIDEO REC/PB AMP
IC801 HA118162NT
VIDEO HEAD
FLYING ERASE HEAD
FM AUDIO HEAD
EP CH2
SP CH1
EP CH1
SP CH2
FE
AUDIO CH1
AUDIO CH2
CN801 13P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
CN803 6P
N.C
N.C
REC CUR.
PB RF
SW30.
GND
TO YC-124 BOARD CN301 (See page 88.)
CN804 8P
PB Y RF
GND (SW)
REC Y RF
SYNC
C ROT
PB C
GND (SW)
REC C
TO MA-140 BOARD CN920 (See page 112.)
CN802 19P
SW 5V
GND (V)
FULL ERASE
REC
REC P 2 (RP)
RF SWP
SP
SW 9V
FE ON
HEAD CONT
RF ENV
SECAM
PB RF
GND (AU)
REC RF
GND (AU)
AF REC P
GND (ERASE)
AF AMP
( ) : REC
< > : PB
B MODEL
REC DET
T.PLAY DET
RECPB CURRENT ADJ
LOGIC
COMP
Q890 2SA812-M5
Q891 2SA812-M5
Q892 UN2213
Q811 2SB1000AKTL
Q810 UN2213
Q805 2SB709A
Q806 2SB709A
Q807 2SB601A
Q808 DTC144
Q809 2SB601A
Q804 2SB601A
Q802 2SB601A
Q803 UN2113
Q813 UN2113
Q814 UN2213
D806 MA151WK
D805 1SS119
D807 1SS119
D801 1SS119
D803 1SS119
D802 1SS119
Q701 2SB601A
Q706 UN2213
D790 1SS119
L806 33μH : B 18μH : EXCEPT B
R829 1K : B 470 : EXCEPT B
C834 4p : B 15p : EXCEPT B
R830 470 : B 820 : EXCEPT B
<SW.9V>
<REC>
<GND (ERASE)>
<FULL.ERASE>
<MOD.CONT>
<COMP.SYNC>
<REC.P/REC>
<C-ROT>
<SW30>
<FULL.ERASE.9V>


7
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12
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14
15
16
17
18
19
20
TO YC-124 BOARD CN301 (See page 88.)
TO MA-140 BOARD CN920 (See page 112.)
CN803 6P
N.C
N.C
REC CUR.
PB RF
SW30.
GND
CN804 8P
PB Y RF
GND (SW)
REC Y RF
SYNC
C ROT
PB C
GND (SW)
REC C
CN802 19P
SW 5V
GND (V)
FULL ERASE
REC
REC P 2 (RP)
RF SWP
SP
SW 9V
FE ON
HEAD CONT
RF ENV
SECAM
PB RF
GND (AU)
REC RF
GND (AU)
AF REC P
GND (ERASE)
AF AMP
( ) : REC
< > : PB
VIDEO REC/PB AMP
REC DET
T.PLAY DET
B MODEL
<REC>
<SW.9V>
<MOD.CONT>
<COMP.SYNC>
<REC.P/REC>
<C-ROT>
<SW30>
<FULL.ERASE.9V>
<GND (ERASE)>
<FULL.ERASE>
Q811 2SB1000AKTL
Q810 UN2213
Q805 2SB709A
Q806 2SB709A
Q807 2SB601A
Q808 DTC144
Q809 2SB601A
Q804 2SB601A
Q813 UN2113
Q814 UN2213
Q803 UN2113
D801 1SS119
D802 1SS119
D803 1SS119
L806 33μH : B 18μH : EXCEPT B
R829 1K : B 470 : EXCEPT B
C834 4p : B 15p : EXCEPT B
R830 470 : B 820 : EXCEPT B
C902 330p
L902 180μH
Q701 2SB601A
Q703 2SB601A
Q705 2SB709A
Q706 UN2213
Q707 2SB601A
D790 1SS119
D791 1SS119
Q201 2SB734 ERASE B+ SWITCH
L701 100μ
L702 68μH
L201 10μH

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

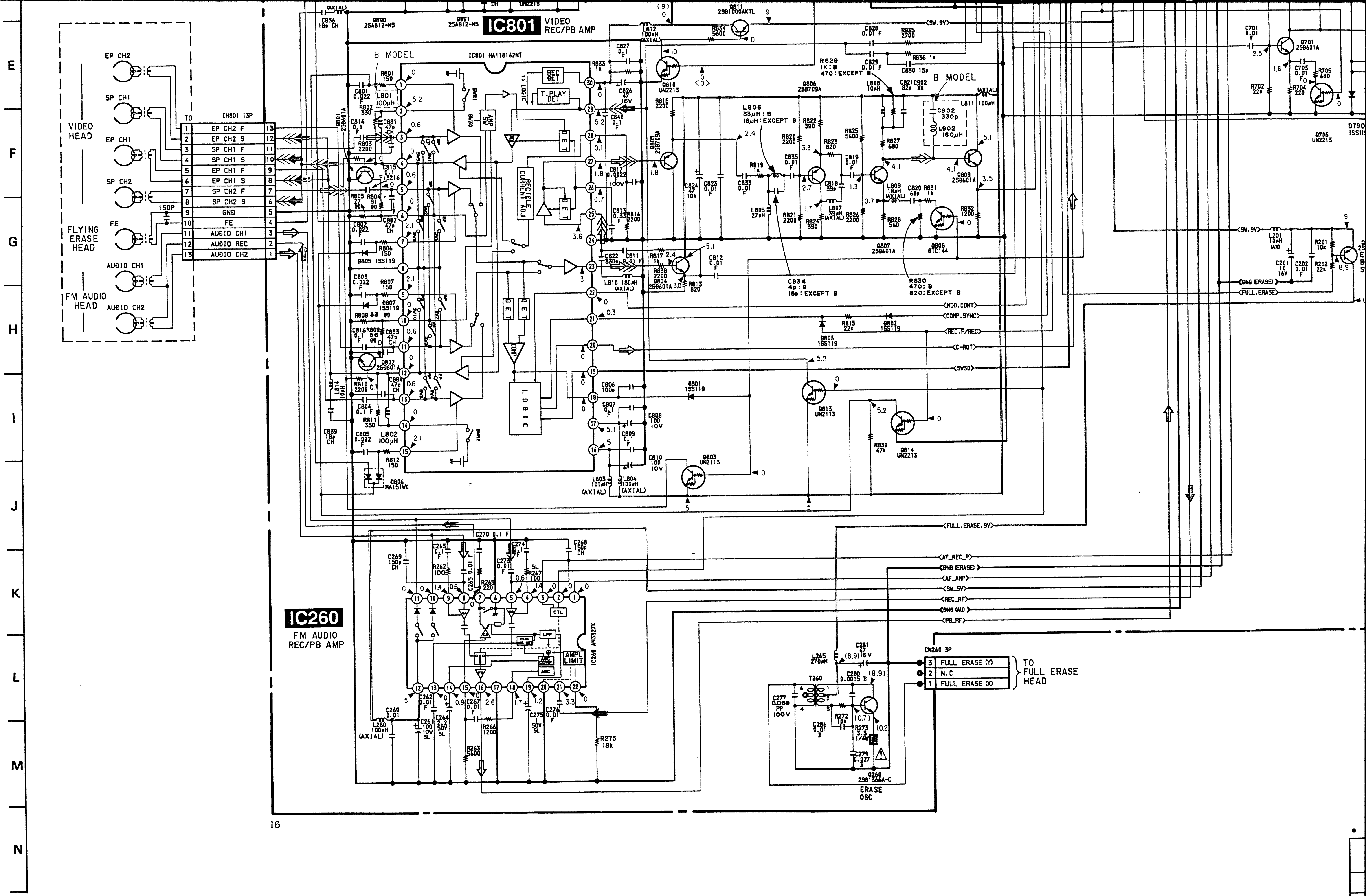
- ○—— : indicated a lead wire mounted on the component side.
- ●—— : indicated a lead wire mounted on the conductor side.
- ● : Through hole.
- ■ : Parts mounted on the conductor side.
- ▩ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.
- Circled numbers refer to waveforms.

Caution :

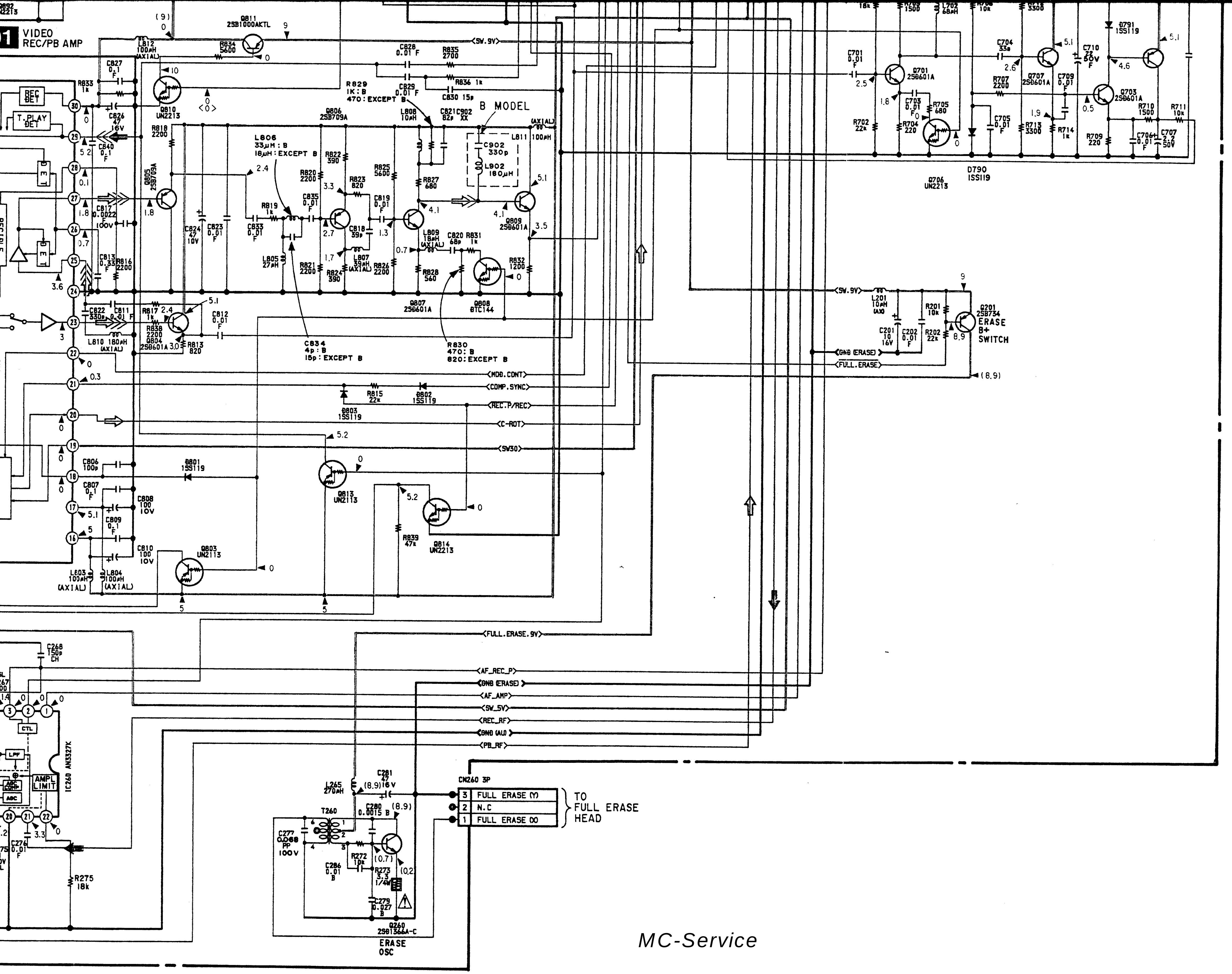
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

For schematic diagram:

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4 W unless otherwise noted.
  Chip resistors: 1/10 W unless otherwise noted.
  kΩ : 1000 Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊟ : nonflammable resistor.
- ⊟ : fusible resistor.


E
F
G
H
I
J
K
L
M
N
VIDEO HEAD
EP CH2
SP CH1
EP CH1
SP CH2
FLYING ERASE HEAD
FE
FM AUDIO HEAD
AUDIO CH1
AUDIO CH2
150P
TO
CN801 13P
EP CH2 F
EP CH2 S
SP CH1 F
SP CH1 S
EP CH1 F
EP CH1 S
SP CH2 F
SP CH2 S
GND
FE
AUDIO CH1
AUDIO REC
AUDIO CH2
IC801
VIDEO REC/PB AMP
IC801 HA118162NT
B MODEL
Q890 2SA812-M5
Q891 2SA812-M5
REC DET
T.PLAY DET
AMP SW
RECIDLE CURRENT ADJ.
LOGIC
Q801 2SB601A
Q802 2SB601A
D805 1SS119
D807 1SS119
D806 MA151WK
L801 100µH
L802 100µH
Q811 2SB1000AKTL
Q810 UN2213
Q805 2SB709A
Q806 2SB709A
Q807 2SB601A
Q808 BTC144
Q809 2SB601A
Q804 2SB601A
Q803 UN2113
Q813 UN2113
Q814 UN2213
D801 1SS119
D802 1SS119
D803 1SS119
L806 33µH : B 18µH : EXCEPT B
C834 4p : B 15p : EXCEPT B
R830 470 : B 820 : EXCEPT B
R829 1K : B 470 : EXCEPT B
L902 180µH
C902 330p
Q701 2SB601A
Q706 UN2213
D790 1SS119
L201 10µH
<SW.9V>
<GND (ERASE)>
<FULL.ERASE>
<MOD.CONT>
<COMP.SYNC>
<REC.P/REC>
<C-ROT>
<SW30>
<FULL.ERASE.9V>
<AF_REC_P>
<GND (ERASE)>
<AF_AMP>
<SW_5V>
<REC_RF>
<GND (AU)>
<PB_RF>
IC260
FM AUDIO REC/PB AMP
IC260 AN3327K
CTL
LPF
ADC COMP
AGC
AMPL LIMIT
L260 100µH (AXIAL)
R275 18k
CN260 3P
FULL ERASE (Y)
N.C
FULL ERASE (X)
TO FULL ERASE HEAD
L265 270µH
T260
Q260 2SB1366A-C
ERASE OSC
16

MC-Service


VIDEO
REC/PB AMP
REC DET
T.PLAY DET
Q811 2SB1000AKTL
L812 100μH (AXIAL)
R834 5600
C827 0.1 F
R833 1k
Q810 UN2213
C826 47 16V
C840 0.1
R818 2200
Q805 2SB709A
C817 0.0022 100V
C813 0.33 F
R816 2200
C824 47 10V
C823 0.01 F
C828 0.01 F
R835 2700
<5V.9V>
R829 1K : B 470 : EXCEPT B
C829 0.01 F
R836 1k
C830 15p
Q806 2SB709A
L806 33μH : B 18μH : EXCEPT B
R822 390
R820 2200
R823 820
R825 5600
L808 10μH
C821 82p
C902 XX
B MODEL
C902 330p
L902 180μH
L811 100μH (AXIAL)
R827 680
Q809 2SB601A
R819 1k
C833 0.01 F
C835 0.01 F
C818 39p
C819 0.01 F
L805 27μH
R821 2200
R824 390
L807 39μH (AXIAL)
R826 2200
L809 18μH (AXIAL)
C820 68p
R831 1k
R828 560
R832 1200
Q807 2SB601A
Q808 BTC144
C822 330p
C811 0.01 F
R817 1k
R858 2200
Q804 2SB601A
R813 820
C812 0.01 F
L810 180μH (AXIAL)
C834 4p : B 15p : EXCEPT B
R830 470 : B 820 : EXCEPT B
<MOD.CONT>
<COMP.SYNC>
<REC.P/REC>
<C-ROT>
<SW30>
R815 22k
Q802 1SS119
Q803 1SS119
C806 100p
Q801 1SS119
C807 0.1 F
C808 100 10V
C809 0.1 F
C810 100 10V
Q813 UN2113
Q814 UN2213
R839 47k
Q803 UN2113
L803 100μH (AXIAL)
L804 100μH (AXIAL)
C701 0.01 F
Q701 2SB601A
C703 0.01 F
R705 680
R702 22k
R704 220
Q706 UN2213
C704 33p
R707 2200
Q707 2SB601A
C709 0.01 F
C705 0.01 F
D790 1SS119
R713 3300
R714 1k
C710 22 50V F
Q791 1SS119
Q703 2SB601A
R710 1500
R711 10k
R709 220
C706 0.01 F
C707 2.2 50V
L702 68μH
<5V.9V>
L201 10μH (AX)
C201 10 16V
C202 0.01 F
R201 10k
R202 22k
Q201 2SB734 ERASE B+ SWITCH
<GND (ERASE)>
<FULL.ERASE>
<FULL.ERASE.9V>
C268 150p CH
<AF_REC_P>
<GND (ERASE)>
<AF_AMP>
<5V_5V>
<REC_RF>
<GND (AU)>
<PB_RF>
CTL
LPF
AMPL LIMIT
IC260 AN3327K
R275 18k
C276 0.01 F
L265 270μH
C281 47 16V
T260
C277 0.068 PP 100V
C280 0.0015 B
C286 0.01 B
R272 10k
R273 3.3 1/4W
C279 0.027 B
Q260 2SB1366A-C
ERASE OSC
CN260 3P
3 FULL ERASE (Y)
2 N.C
1 FULL ERASE (X)
TO FULL ERASE HEAD

THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.
(In addition to this, the necessary note is printed in each block.)

For printed wiring boards:

- o——— : indicated a lead wire mounted on the component side.
- •——— : indicated a lead wire mounted on the conductor side.
- ● : Through hole.
- ■ : Parts mounted on the conductor side.
- ▩ : Pattern from the side which enables seeing.
- ▨ : Pattern of the rear side.
- Circled numbers refer to waveforms.

Caution :

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component side)	Parts on the parts face side seen from the parts face are indicated.

For schematic diagram:

- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4 W unless otherwise noted.
  Chip resistors: 1/10 W unless otherwise noted.
  kΩ : 1000 Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊟ : nonflammable resistor.
- ⊟ : fusible resistor.
- ☐ : panel designation.
- △ : internal component.
- ——— : B + Line.
- – – – : B − Line.
- ⇨ : IN/OUT direction of B line (+, −).
- Circled numbers refer to waveforms.
- Voltage are dc between ground and measurement points.
- Readings are taken with a color‐bar signal input.
- Readings are taken with a digital multimeter (DC10 MΩ).
- Voltage are taken with a VOM (input impedance 10 MΩ).
- Voltage variations may be noted due to normal production tolerances.

Note : The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Note:	Note:
The components identified by matk ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifie.

When indicating parts by reference number, please include the board name.

- **Signal palth**

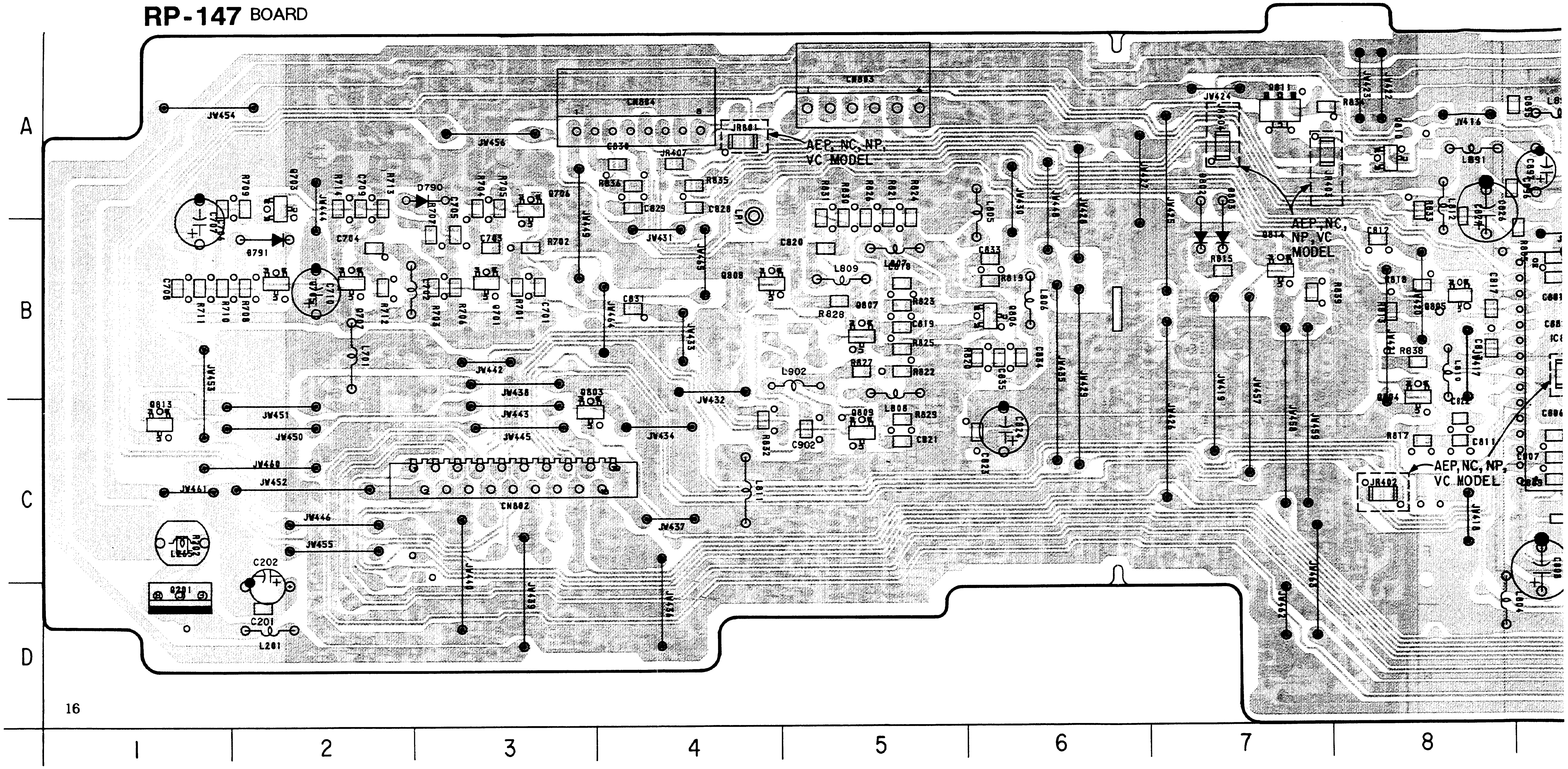
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC	➡	➡>	➡>>	➡
PB	⇨	⇨>	⇨>>	⇨

RP-147 (HEAD AMP) PRINTED WIRING BOARD

– Ref. No. RP-147 BOARD : 1,000 Series –

RP-147 BOARD

D790	A-3
D791	B-2
D801	D-9
D802	B-7
D803	B-7
D805	D-10
D806	C-10
D807	C-10
IC260	B-11
IC801	B-9
Q201	D-1
Q701	B-3
Q703	A-2
Q705	B-2
Q706	A-3
Q707	B-2
Q801	C-10
Q802	C-10
Q803	C-3
Q804	C-8
Q805	B-8
Q806	B-6
Q807	B-5
Q808	B-4
Q809	C-5
Q810	A-8
Q811	A-7
Q813	C-1
Q814	B-7
Q890	A-10
Q891	A-9
Q892	A-9

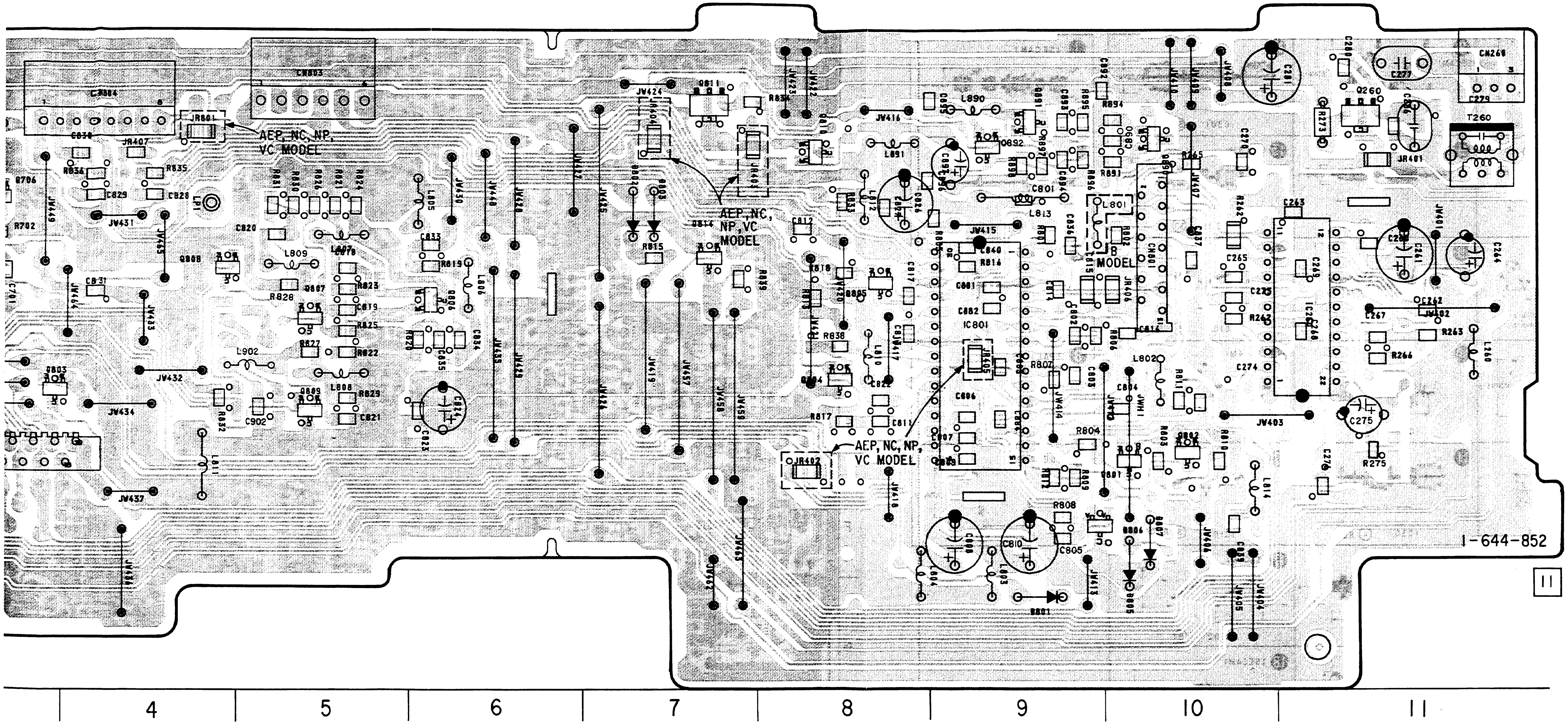

RP-147 BOARD
A
B
C
D
1
2
3
4
5
6
7
8
16
CN804
CN803
CN802
JR801
JR407
JR402
AEP, NC, NP, VC MODEL
AEP, NC, NP, VC MODEL
AEP, NC, NP, VC MODEL
D790
D791
C202
C201
L201
Q201
Q813
Q803
Q808
Q807
Q809
Q806
Q811
Q814
L809
L902
L808
L811
C902
JW454
JW456
JW451
JW450
JW460
JW452
JW461
JW446
JW455
JW442
JW438
JW443
JW445
JW431
JW432
JW434
JW437
R702
C704
C705
C703
R828
R838
R817
L891
C811

DIODE

D806	8-719-400-18	MA152WK

TRANSISTOR

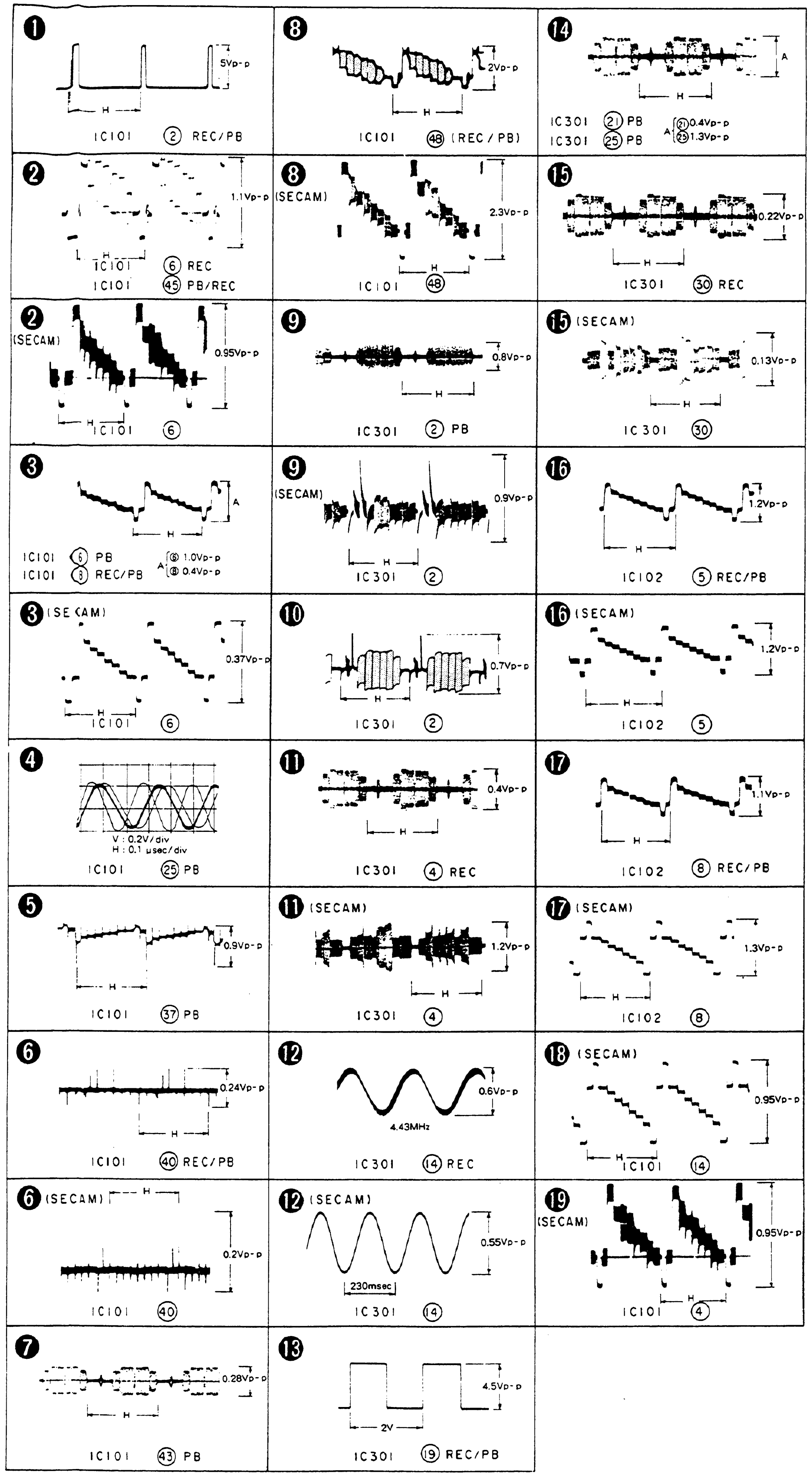
Q260	8-729-103-72	2SD1005-BV
Q701	8-729-422-28	2SD601A-R
Q703	8-729-422-28	2SD601A-R
Q705	8-729-422-37	2SB709A-R
Q706	8-729-421-19	UN2213
Q707	8-729-422-28	2SD601A-R
Q801	8-729-422-28	2SD601A-R
Q802	8-729-422-28	2SD601A-R
Q803	8-729-424-18	UN2113
Q804	8-729-422-28	2SD601A-R
Q805	8-729-422-37	2SB709A-R
Q806	8-729-422-37	2SB709A-R
Q807	8-729-422-28	2SD601A-R
Q808	8-729-901-01	DTC144EK
Q809	8-729-422-28	2SD601A-R
Q810	8-729-901-47	DTA143EK
Q811	8-729-301-98	2SB1000A-L
Q813	8-729-424-18	UN2113
Q814	8-729-421-19	UN2213
Q890	8-729-216-22	2SA1162
Q891	8-729-216-22	2SA1162
Q892	8-729-421-19	UN2213


CN804
CN803
CN260
T260
JR801
AEP, NC, NP, VC MODEL
AEP, NC, NP, VC MODEL
AEP, NC, NP, VC MODEL
B MODEL
IC801
IC260
JR402
JR405
1-644-852
11
4
5
6
7
8
9
10
11

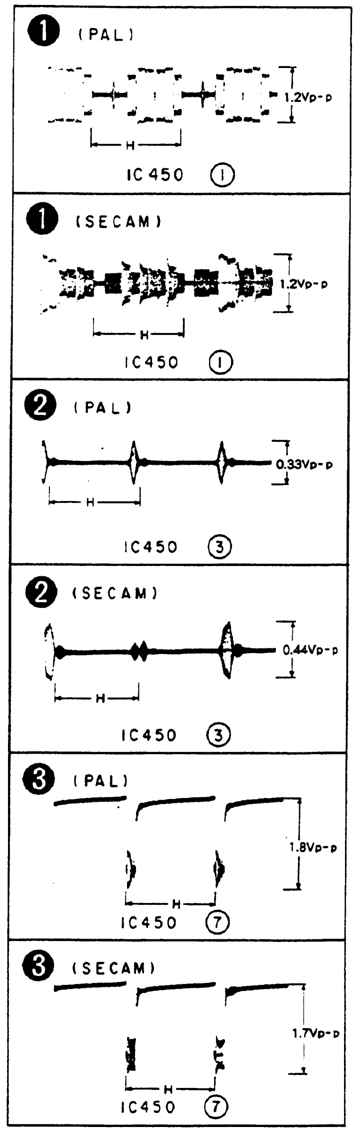
28	2SD601A-R	Q805	8-729-422-37	2SB709A-R	Q810	8-729-901-47	DTA143EK	Q891	8-729-216-22	2SA1162
28	2SD601A-R	Q806	8-729-422-37	2SB709A-R	Q811	8-729-301-98	2SB1000A-L	Q892	8-729-421-19	UN2213
28	2SD601A-R	Q807	8-729-422-28	2SD601A-R	Q813	8-729-424-18	UN2113			
18	UN2113	Q808	8-729-901-01	DTC144EK	Q814	8-729-421-19	UN2213			
28	2SD601A-R	Q809	8-729-422-28	2SD601A-R	Q890	8-729-216-22	2SA1162			

)

YC-124 BOARD (1/2)

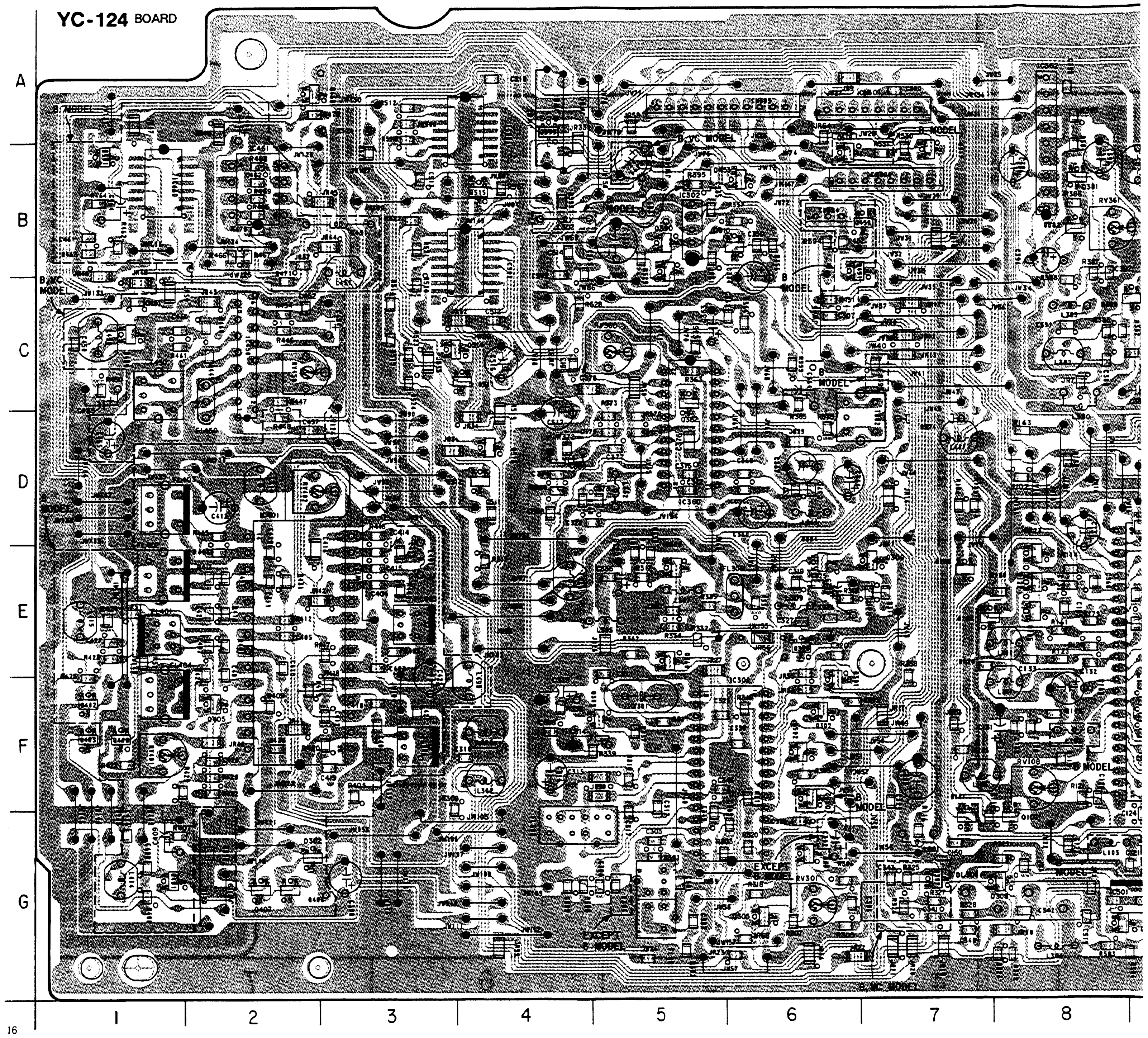


YC-124 BOARD (2/2)



YC-124 (VIDEO) PRINTED WIRING BOARD

– Ref. No. YC-124 BOARD : 2,000 Series –



DIODE

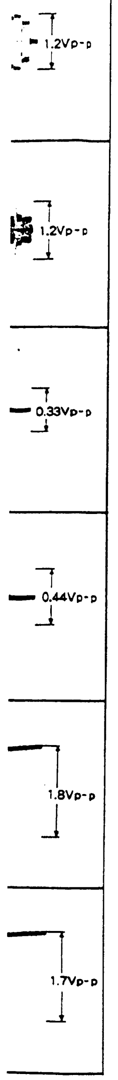
D101	8-719-400-18	MA152WK
D105	8-719-400-18	MA152WK
D301	8-719-400-18	MA152WK
D302	8-719-400-18	MA152WK (B)
D401	8-719-400-18	MA152WK (B)

IC

IC460	8-759-927-46	SN74HC00ANS (B)
IC501	8-759-925-90	SN74HC74ANS
IC502	8-759-300-71	TC4053BF

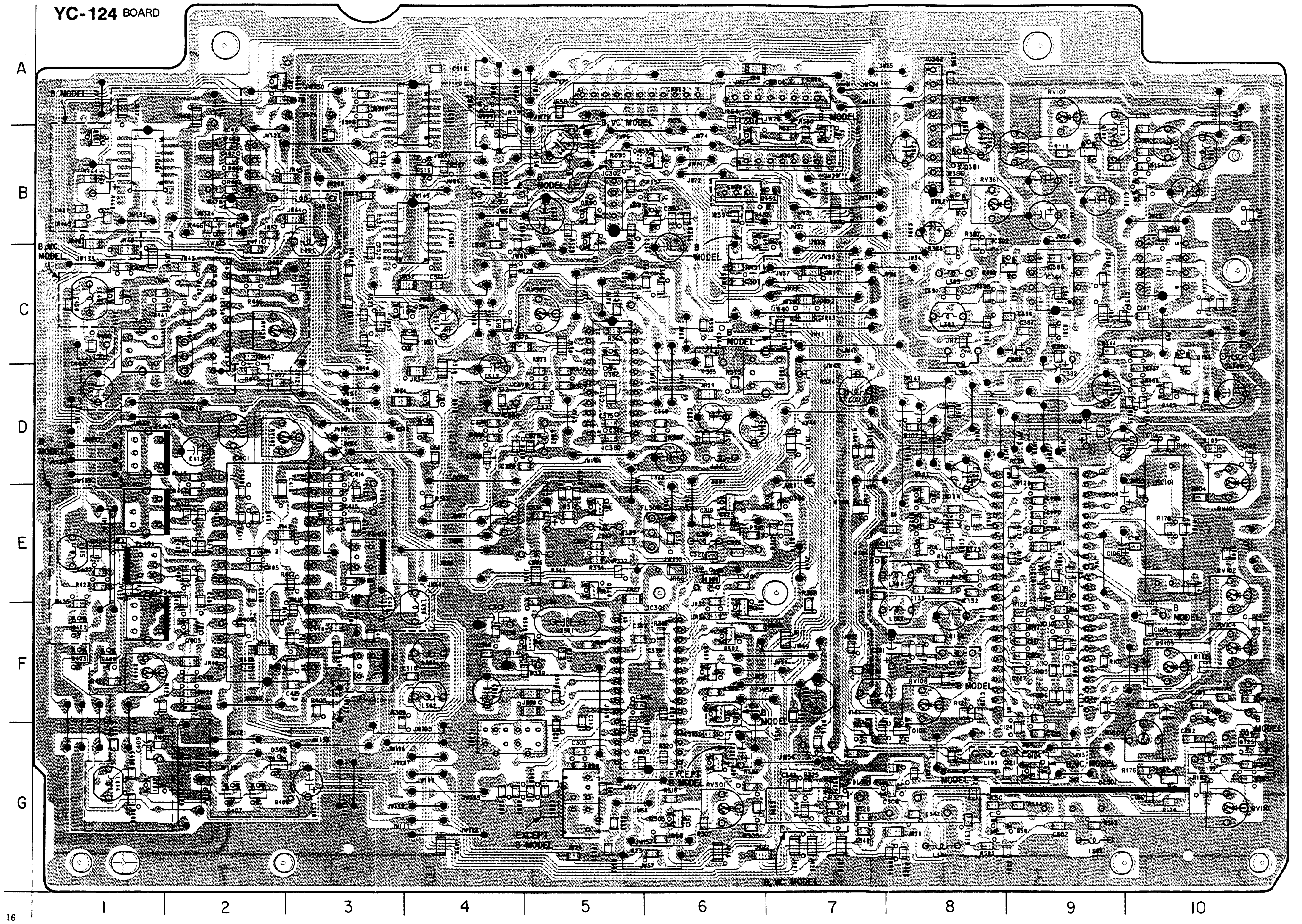
TRANSISTOR

Q102	8-729-216-22	2SA1162
Q104	8-729-901-01	DTC144EK
Q105	8-729-920-74	2SC2412K-QR
Q106	8-729-216-22	2SA1162
Q111	8-729-216-22	2SA1162
Q114	8-729-901-01	DTC144EK (EXCEPT B)
Q121	8-729-920-74	2SC2412K-QR
Q122	8-729-901-01	DTC144EK
Q123	8-729-901-01	DTC144EK
Q124	8-729-901-01	DTC144EK
Q125	8-729-901-01	DTC144EK
Q301	8-729-920-74	2SC2412K-QR
Q302	8-729-920-74	2SC2412K-QR
Q303	8-729-920-74	2SC2412K-QR
Q304	8-729-900-53	DTC114EK
Q305	8-729-216-22	2SA1162
Q306	8-729-901-01	DTC144EK
Q307	8-729-920-74	2SC2412K-QR (VC)
Q308	8-729-920-74	2SC2412K-QR
Q309	8-729-920-74	2SC2412K-QR
Q310	8-729-901-04	DTA114EK
Q352	8-729-901-01	DTC144EK (VC)
Q360	8-729-809-77	2SC3142-J4
Q362	8-729-901-01	DTC144EK
Q380	8-729-920-74	2SC2412K-QR
Q381	8-729-920-74	2SC2412K-QR
Q382	8-729-216-22	2SA1162
Q383	8-729-920-74	2SC2412K-QR (EXCEPT B)
Q390	8-729-901-01	DTC144EK (B)
Q401	8-729-920-74	2SC2412K-QR (B)
Q402	8-729-920-74	2SC2412K-QR (B)
Q403	8-729-901-47	DTA143EK (B)
Q405	8-729-920-74	2SC2412K-QR (B)
Q406	8-729-901-47	DTA143EK (B)
Q407	8-729-901-01	DTC144EK (B)
Q408	8-729-901-01	DTC144EK (B)
Q450	8-729-920-74	2SC2412K-QR
Q451	8-729-901-01	DTC144EK (B)
Q452	8-729-901-01	DTC144EK (B)
Q453	8-729-901-01	DTC144EK (B)



YC-124 (VIDEO) PRINTED WIRING BOARD

— Ref. No. YC-124 BOARD : 2,000 Series —



TRANSISTOR

(B)
(B)
0ANS (B)
4ANS
F

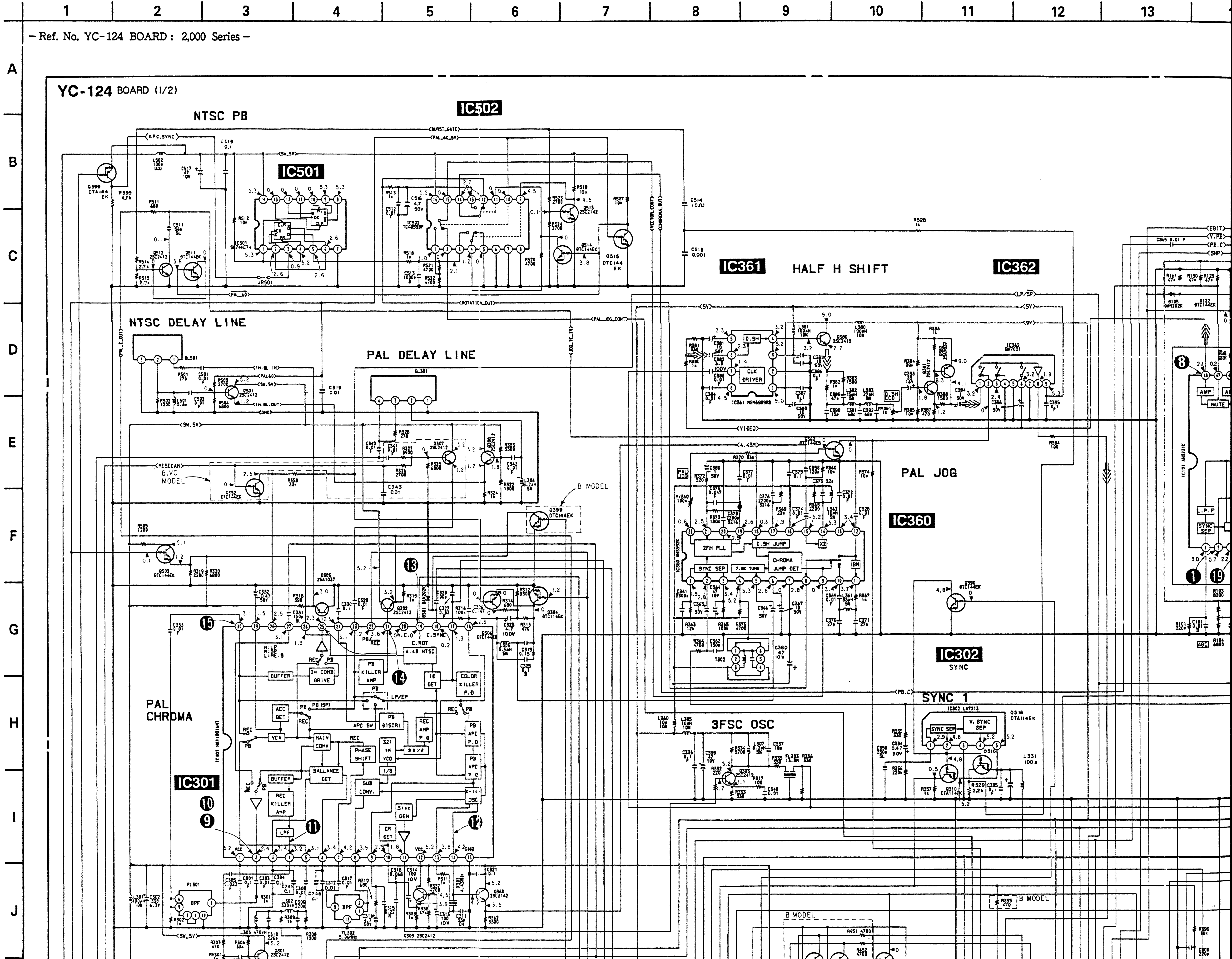
Q102	8-729-216-22	2SA1162	
Q104	8-729-901-01	DTC144EK	
Q105	8-729-920-74	2SC2412K-QR	
Q106	8-729-216-22	2SA1162	
Q111	8-729-216-22	2SA1162	
Q114	8-729-901-01	DTC144EK	(EXCEPT B)
Q121	8-729-920-74	2SC2412K-QR	
Q122	8-729-901-01	DTC144EK	
Q123	8-729-901-01	DTC144EK	
Q124	8-729-901-01	DTC144EK	
Q125	8-729-901-01	DTC144EK	
Q301	8-729-920-74	2SC2412K-QR	
Q302	8-729-920-74	2SC2412K-QR	
Q303	8-729-920-74	2SC2412K-QR	
Q304	8-729-900-53	DTC114EK	
Q305	8-729-216-22	2SA1162	
Q306	8-729-901-01	DTC144EK	
Q307	8-729-920-74	2SC2412K-QR	(VC)
Q308	8-729-920-74	2SC2412K-QR	
Q309	8-729-920-74	2SC2412K-QR	
Q310	8-729-901-04	DTA114EK	
Q352	8-729-901-01	DTC144EK	(VC)
Q360	8-729-809-77	2SC3142-J4	
Q362	8-729-901-01	DTC144EK	
Q380	8-729-920-74	2SC2412K-QR	
Q381	8-729-920-74	2SC2412K-QR	
Q382	8-729-216-22	2SA1162	
Q383	8-729-920-74	2SC2412K-QR	(EXCEPT B)
Q390	8-729-901-01	DTC144EK	(B)
Q401	8-729-920-74	2SC2412K-QR	(B)
Q402	8-729-920-74	2SC2412K-QR	(B)
Q403	8-729-901-47	DTA143EK	(B)
Q405	8-729-920-74	2SC2412K-QR	(B)
Q406	8-729-901-47	DTA143EK	(B)
Q407	8-729-901-01	DTC144EK	(B)
Q408	8-729-901-01	DTC144EK	(B)
Q450	8-729-920-74	2SC2412K-QR	
Q451	8-729-901-01	DTC144EK	(B)
Q452	8-729-901-01	DTC144EK	(B)
Q453	8-729-901-01	DTC144EK	(B)
Q460	8-729-901-01	DTC144EK	(B)
Q501	8-729-920-74	2SC2412K-QR	
Q502	8-729-901-01	DTC144EK	
Q511	8-729-920-74	2SC2412K-QR	(EXCEPT B)
Q512	8-729-920-74	2SC2412K-QR	
Q513	8-729-901-01	DTC144EK	(EXCEPT B)
Q513	8-729-920-74	2SC2412K-QR	(B)
Q514	8-729-901-01	DTC144EK	
Q515	8-729-901-01	DTC144EK	(B)
Q516	8-729-901-04	DTA114EK	(B)
Q517	8-729-901-47	DTA143EK	(B)
Q518	8-729-901-01	DTC144EK	(B)

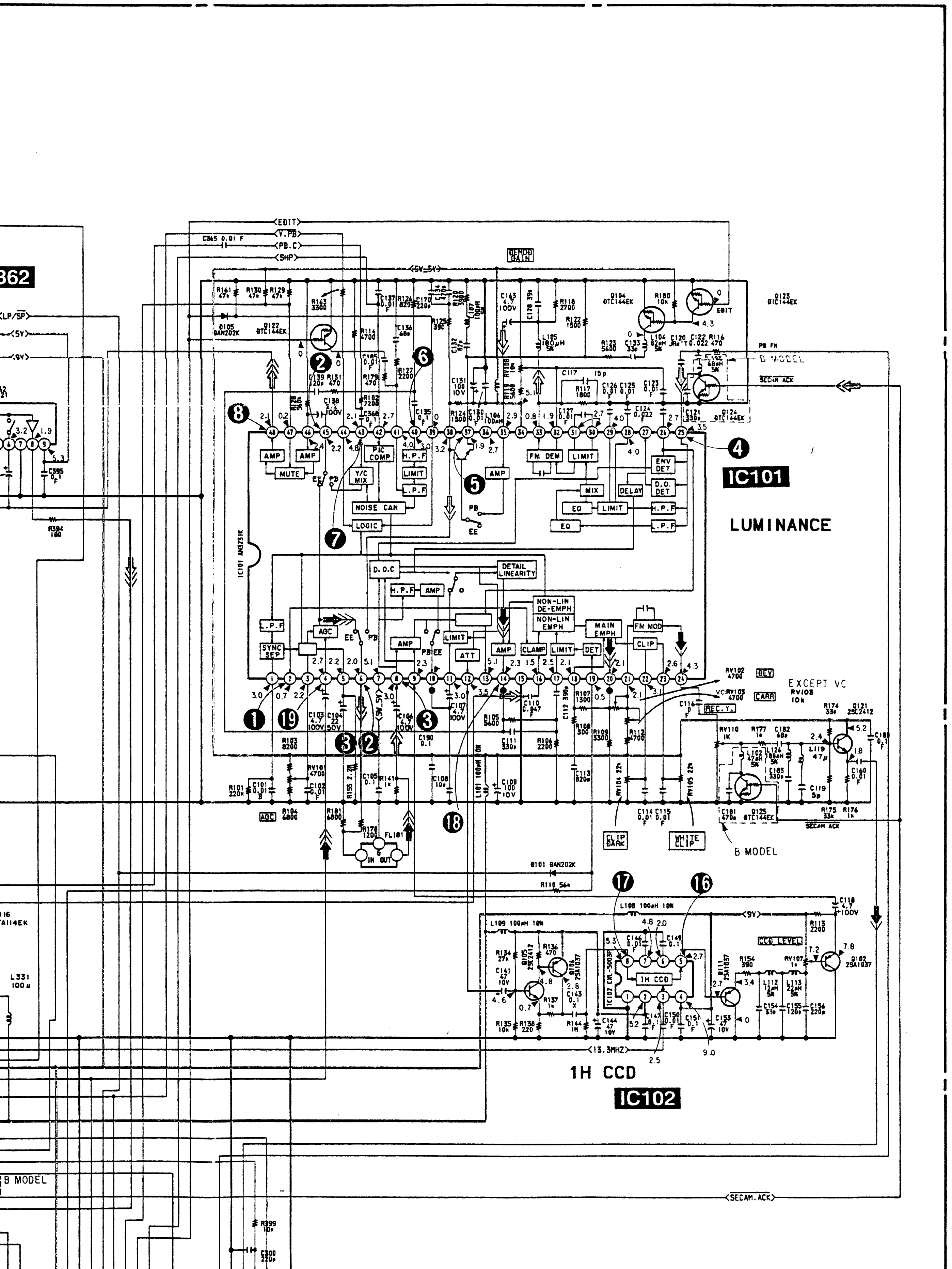
YC-124 BOARD

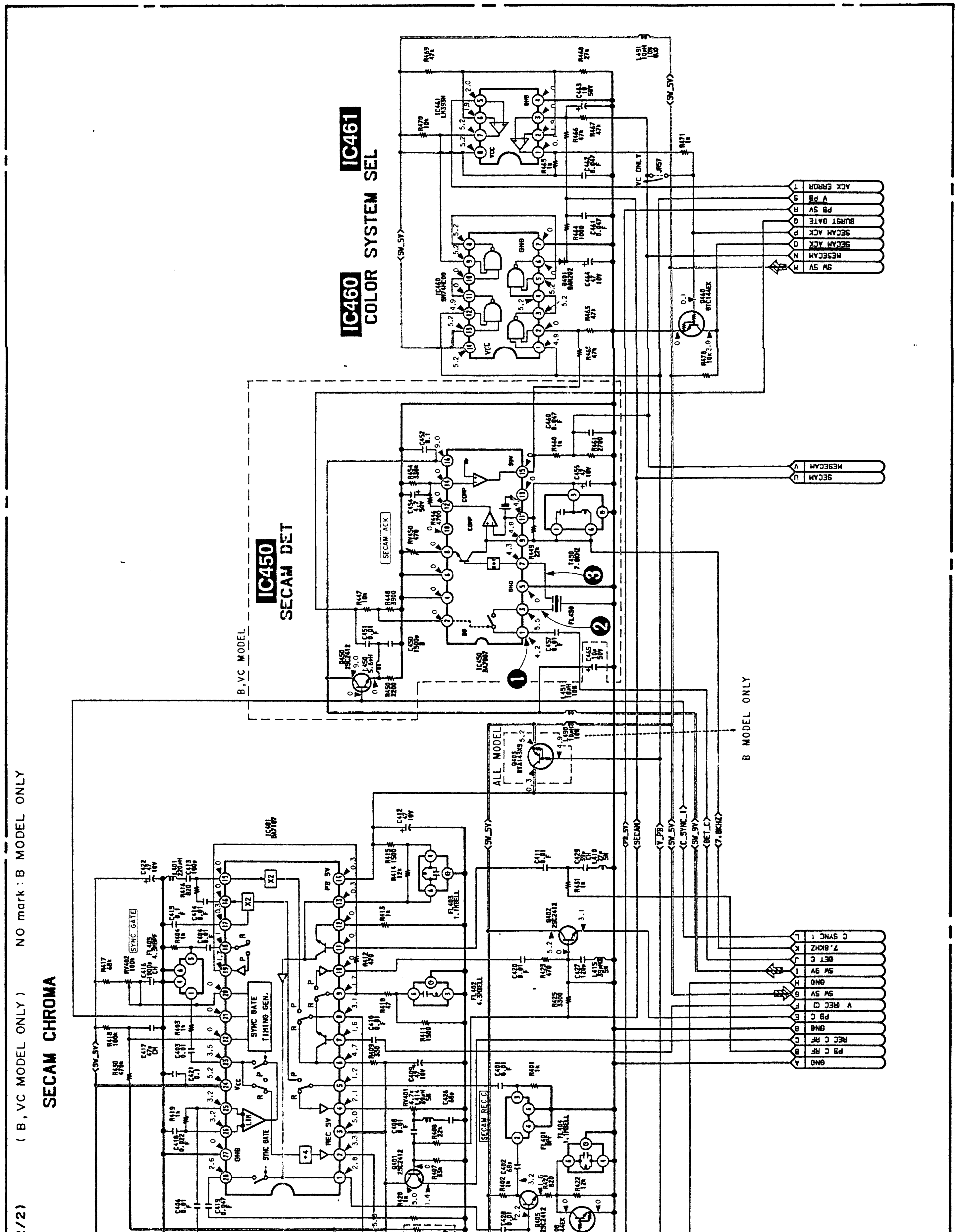
D101	G-7
D105	E-8
D301	E-6
D302	G-2
D401	B-1
IC101	E-9
IC102	C-10
IC301	F-6
IC302	B-5
IC360	C-5
IC361	C-9
IC362	B-8
IC401	E-2
IC450	C-2
IC460	B-1
IC461	B-2
IC501	B-4
IC502	B-4
Q102	B-9
Q104	E-7
Q105	D-10
Q106	D-10
Q111	B-10
Q121	G-10
Q122	E-8
Q123	E-8
Q124	G-9
Q125	G-10
Q301	G-6
Q302	F-6
Q303	E-5
Q304	E-6
Q305	G-6
Q306	E-7
Q307	G-7
Q308	G-8
Q309	F-5
Q310	B-6
Q352	F-6
Q360	E-5
Q362	C-5
Q380	C-9
Q381	B-8
Q382	B-8
Q383	B-5
Q390	E-6
Q401	G-1
Q402	F-1
Q403	F-1
Q405	F-2
Q406	G-2
Q407	G-2
Q408	F-1
Q450	C-1
Q451	C-7
Q452	B-7
Q453	B-6
Q460	A-2
Q501	G-8
Q502	F-6
Q511	C-3
Q512	D-3
Q513	D-4
Q513	C-3
Q514	B-4
Q515	B-5
Q516	B-7
Q517	B-7
Q518	A-4

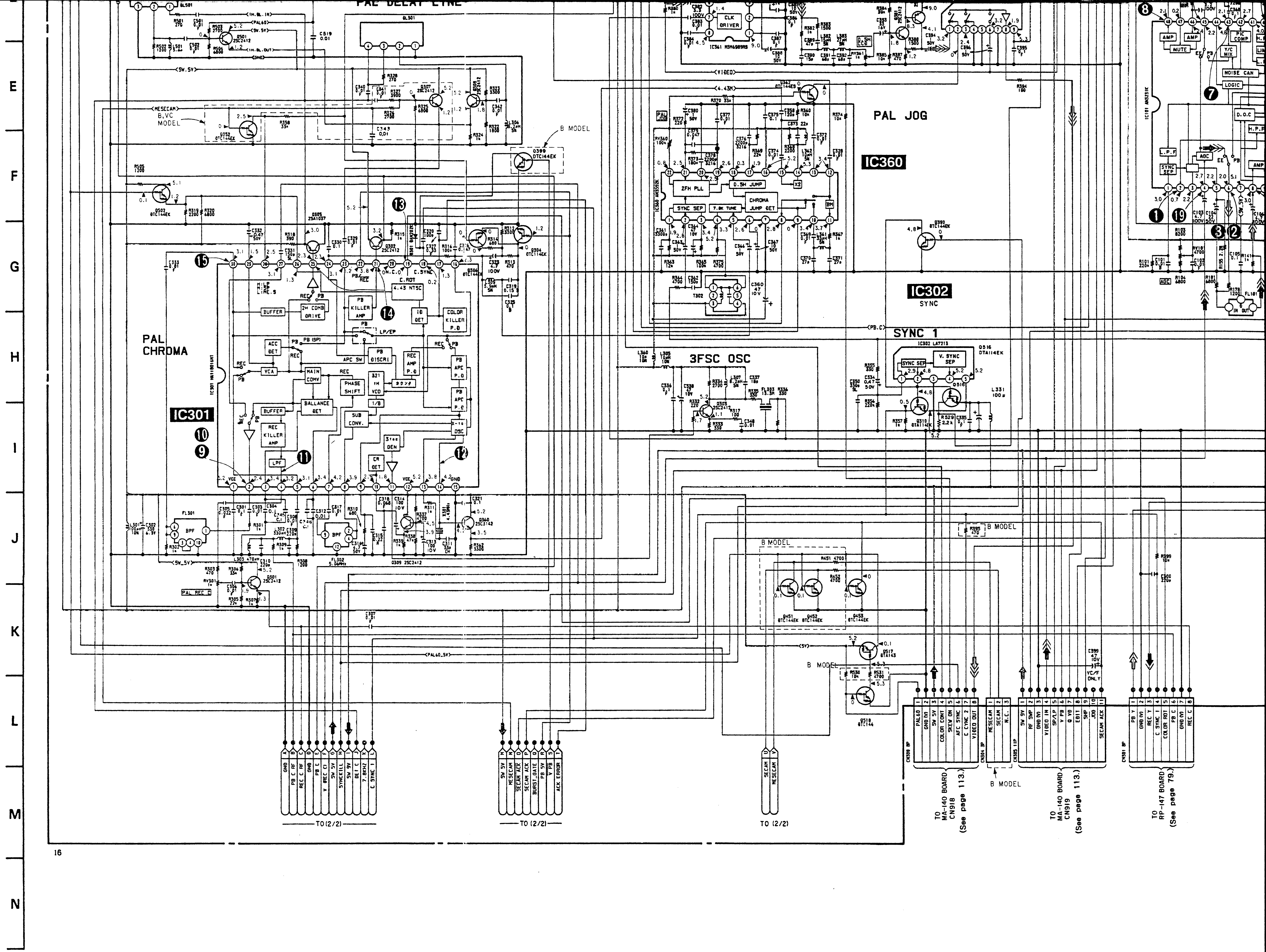
YC-124 (VIDEO) SCHEMATIC DIAGRAM

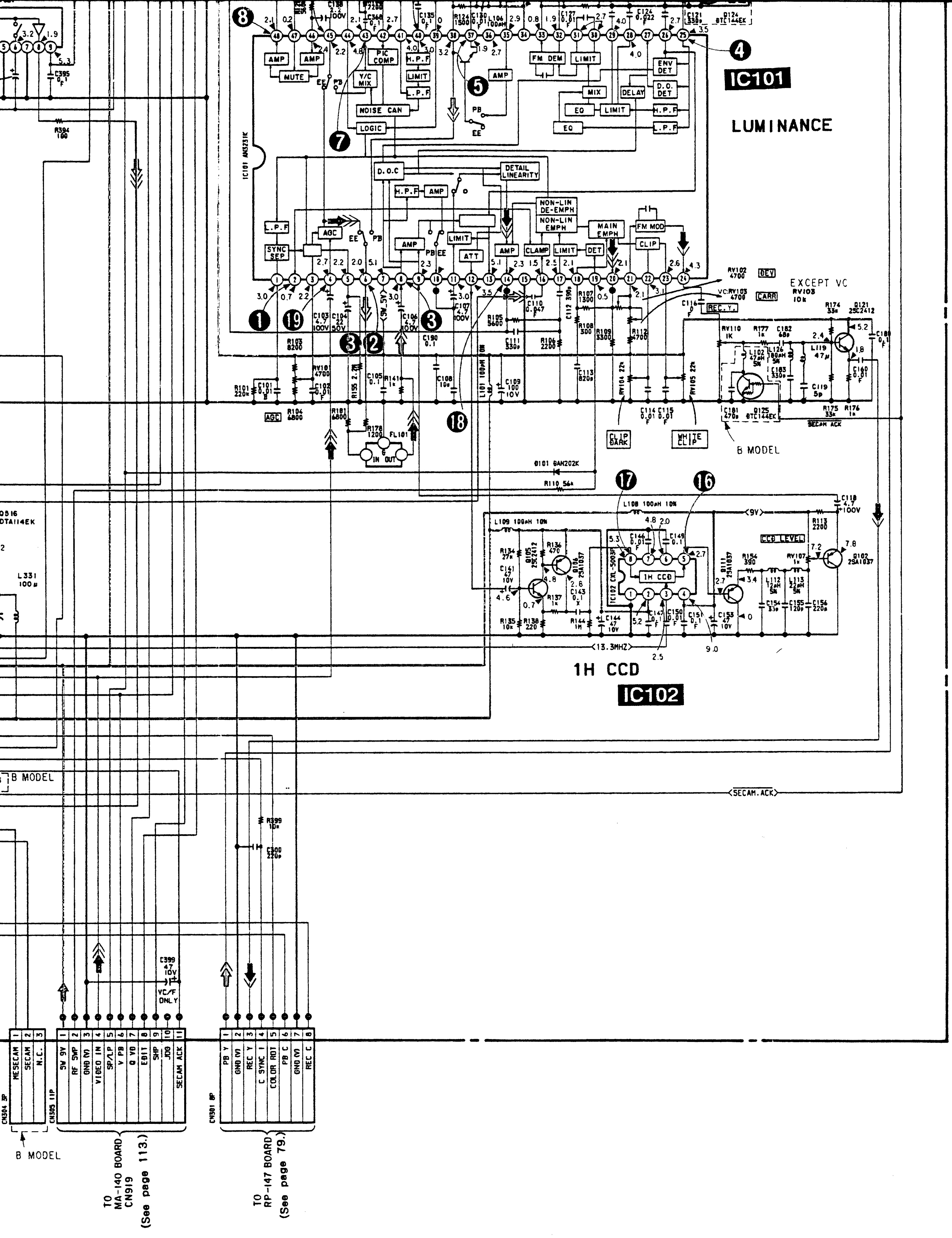
– Ref. No. YC-124 BOARD : 2,000 Series –


YC-124 BOARD (1/2)
NTSC PB
IC502
IC501
NTSC DELAY LINE
PAL DELAY LINE
IC361
HALF H SHIFT
IC362
PAL JOG
IC360
IC302
SYNC
SYNC 1
3FSC OSC
PAL CHROMA
IC301
B MODEL
B, VC MODEL
1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J


IC101
LUMINANCE
IC101 AN3231K
EDIT
V.PB
PB.C
SHP
5V_SV
DEMOD GAIN
AMP
MUTE
Y/C MIX
PIC COMP
H.P.F
LIMIT
L.P.F
NOISE CAN
LOGIC
FM DEM
LIMIT
MIX
EQ
DELAY
ENV DET
D.O. DET
D.O.C
DETAIL LINEARITY
NON-LIN DE-EMPH
NON-LIN EMPH
MAIN EMPH
FM MOD
CLIP
SYNC SEP
AGC
ATT
CLAMP
DET
EE
PB
EXCEPT VC
B MODEL
SECAM ACK
REC Y
DEV
CARR
CLIP DARK
WHITE CLIP
FL101
1H CCD
IC102
IC102 CX-20030
13.3MHZ
CCD LEVEL
9V
SECAM.ACK
B MODEL


IC461
IC460 COLOR SYSTEM SEL
IC450 SECAM DET
SECAM CHROMA
(B, VC MODEL ONLY)
NO mark : B MODEL ONLY
B MODEL ONLY
ALL MODEL
B, VC MODEL
SECAM ACK
SYNC GATE
SYNC GATE TIMING GEN.
SECAM REC C
REC 5V
PB 5V
ACK ERROR
V PB
PB 5V
BURST GATE
SECAM ACK
SECAM ACK
MESECAM
9V SW
MESECAM
SECAM
C SYNC 1
7.8KHZ
C DET
5V SW
GND
9V SW
V REC C
PB C
GND
REC C RF
PB C RF
GND

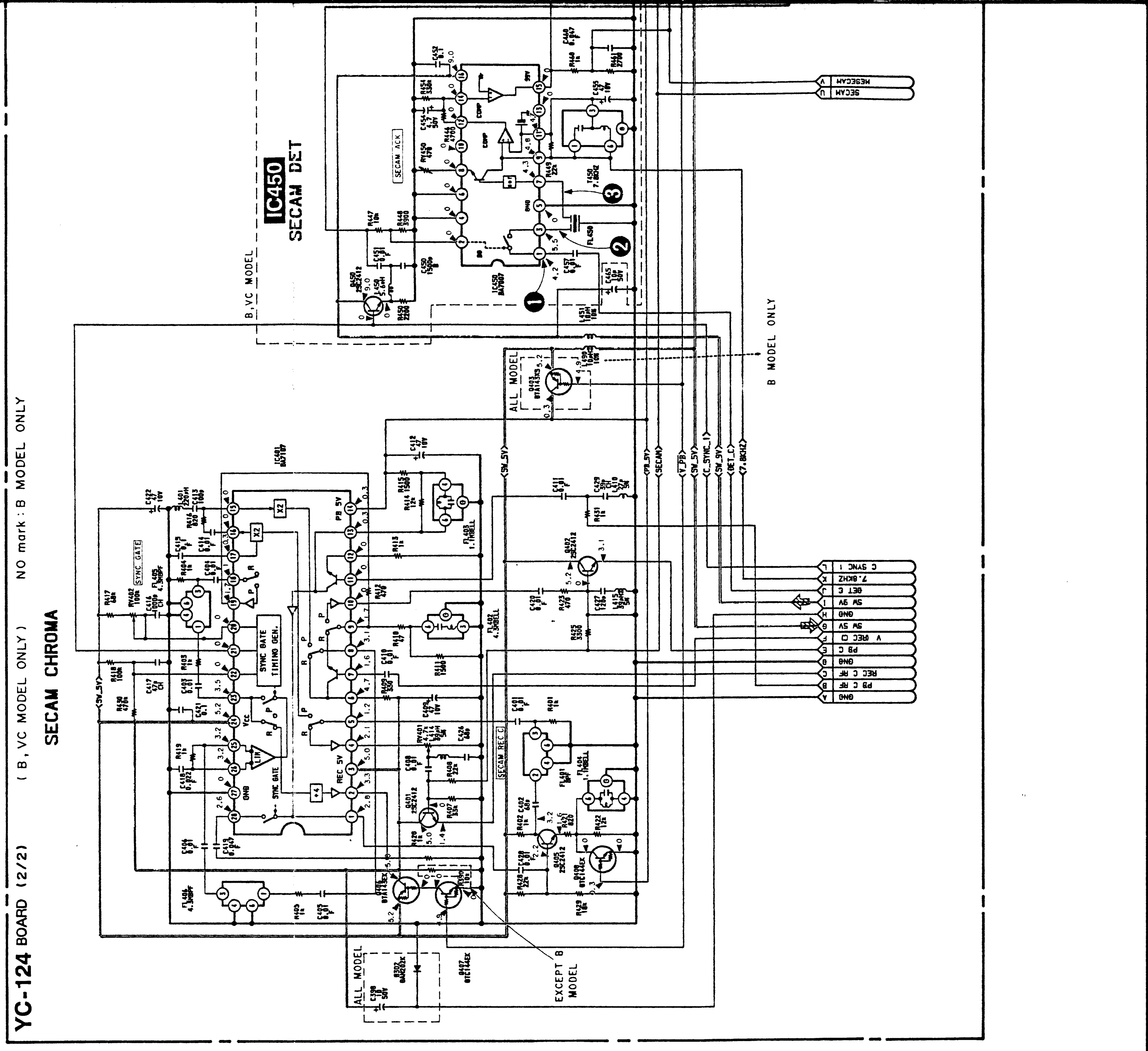

E
F
G
H
I
J
K
L
M
N
PAL DELAY LINE
PAL CHROMA
IC301
PAL JOG
IC360
IC302
SYNC
SYNC 1
3FSC OSC
B MODEL
B,VC MODEL
C.ROT
4.43 NTSC
BUFFER
2H COMB DRIVE
PB KILLER AMP
ID DET
COLOR KILLER P.D
LP/EP
ACC DET
VCA
MAIN CONV
PHASE SHIFT
321 1H VCO
PB DISCRI
REC AMP P.D
PB APC P.D
PB APC P.C
BALLANCE DET
SUB CONV.
X-tal OSC
REC KILLER AMP
LPF
CR DET
3fsc GEN
BPF
2FH PLL
0.5H JUMP
SYNC SEP
CHROMA JUMP DET
CLK DRIVER
SYNC SEP
V. SYNC SEP
AMP
MUTE
Y/C MIX
NOISE CAN
LOGIC
D.O.C
L.P.F
AGC
TO (2/2)
TO (2/2)
TO (2/2)
TO MA-140 BOARD CN918 (See page 113.)
B MODEL
TO MA-140 BOARD CN919 (See page 113.)
TO RP-147 BOARD (See page 79.)
16


IC101
LUMINANCE
IC101 AN3231K
SYNC SEP
AGC
L.P.F
D.O.C
DETAIL LINEARITY
H.P.F
AMP
NON-LIN DE-EMPH
NON-LIN EMPH
MAIN EMPH
FM MOD
CLIP
LIMIT
ATT
CLAMP
DET
MUTE
Y/C MIX
PIC COMP
NOISE CAN
LOGIC
FM DEM
MIX
DELAY
D.O. DET
ENV DET
EQ
EXCEPT VC
RV102 4700
RV103 10k
DEV
CARR
REC Y
B MODEL
CLIP DARK
WHITE CLIP
SECAM ACK
1H CCD
IC102
IC102 CXL-5003P
CCD LEVEL
(9V)
(13.3MHZ)
(SECAM.ACK)
VC/F ONLY
MESECAM
SECAM
N.C.
CN304 3P
5V 9V
RF SWP
GND(V)
VIDEO IN
SP/LP
V PB
EDIT
SWP
JOG
SECAM ACK
CN395 11P
PB Y
GND(V)
REC Y
C SYNC
COLOR ROT
PB C
GND(V)
REC C
CN301 8P
B MODEL
TO MA-140 BOARD CN919 (See page 113.)
TO RP-147 BOARD (See page 79.)

YC-124 BOARD (2/2)

SECAM CHROMA

(B, VC MODEL ONLY)　　NO mark : B MODEL ONLY


IC450
SECAM DET
SECAM ACK
B, VC MODEL
B MODEL ONLY
ALL MODEL
IC401 BA7107
SYNC GATE
SYNC GATE TIMING GEN.
REC 5V
PB 5V
SECAM REC
EXCEPT B MODEL
(SW_5V)
(PB_5V)
(SECAM)
(V_PB)
(SW_5V)
(C_SYNC_1)
(SW_9V)
(DET_C)
(7.8KHZ)
MESECAM
SECAM
C SYNC I
7.8KHZ
DET C
5V 9V
GND
9V 5V
V REC C
PB C
GND
REC C RF
PB C RF
GND

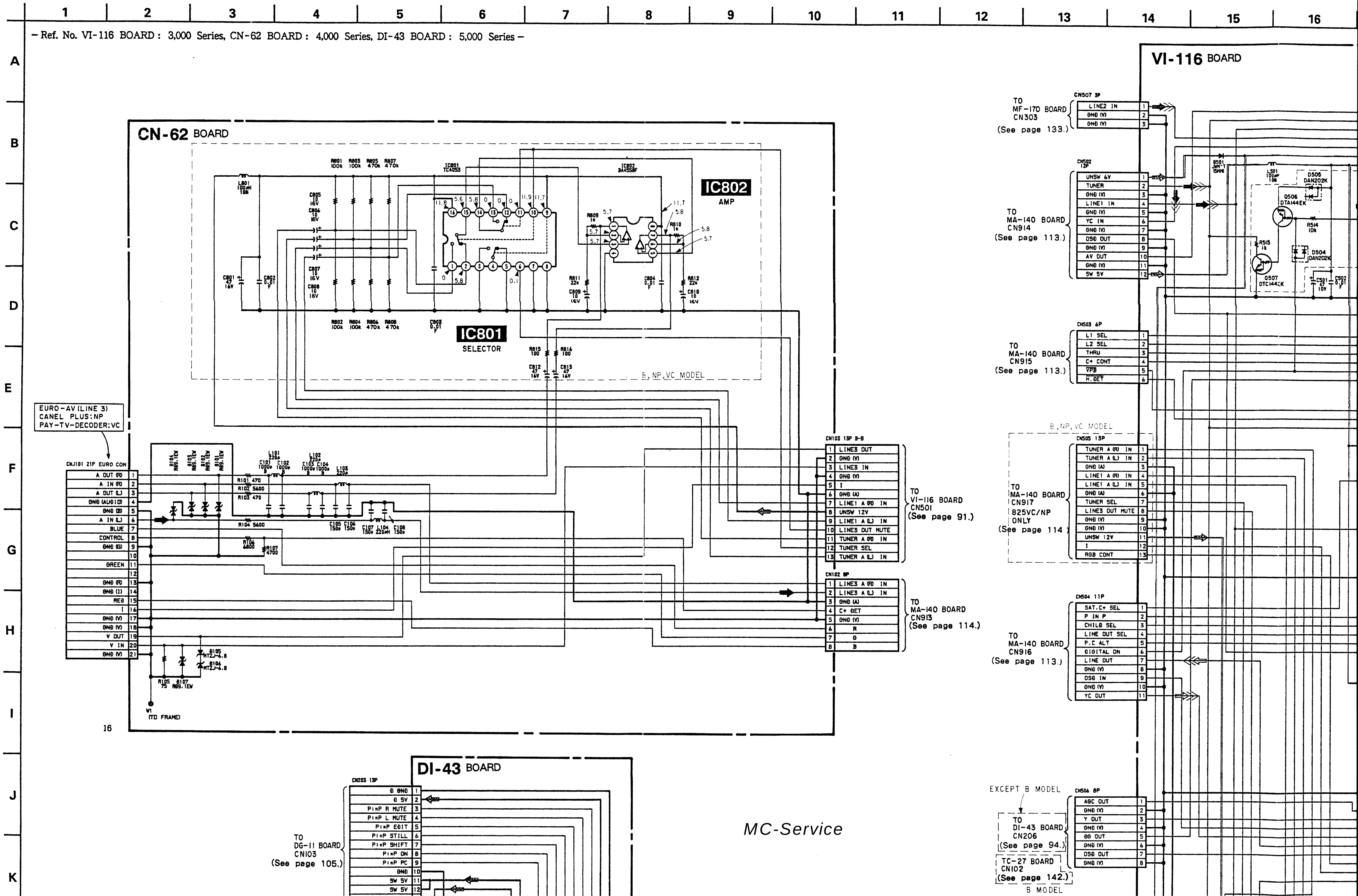
16

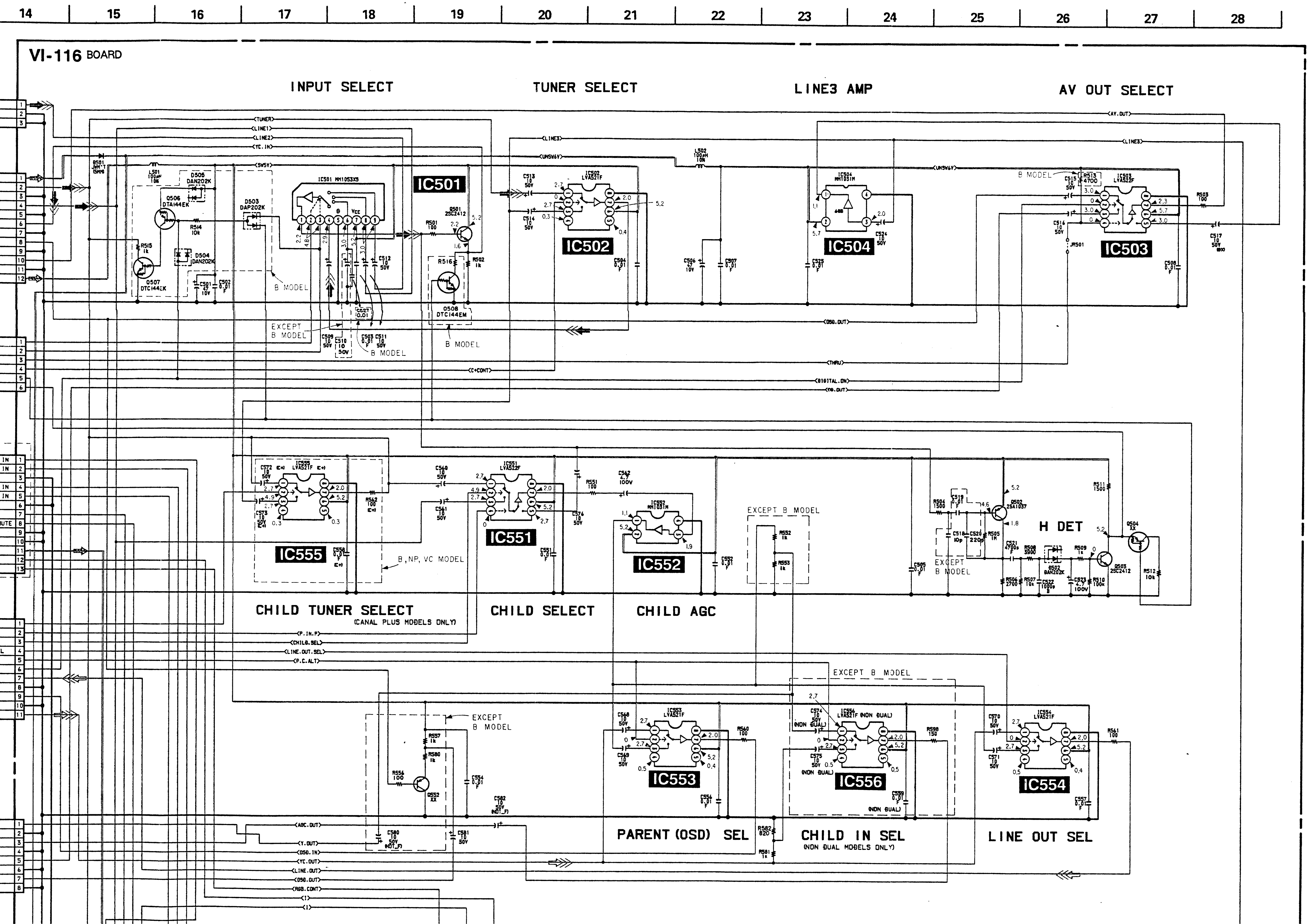
- **Signal palth**

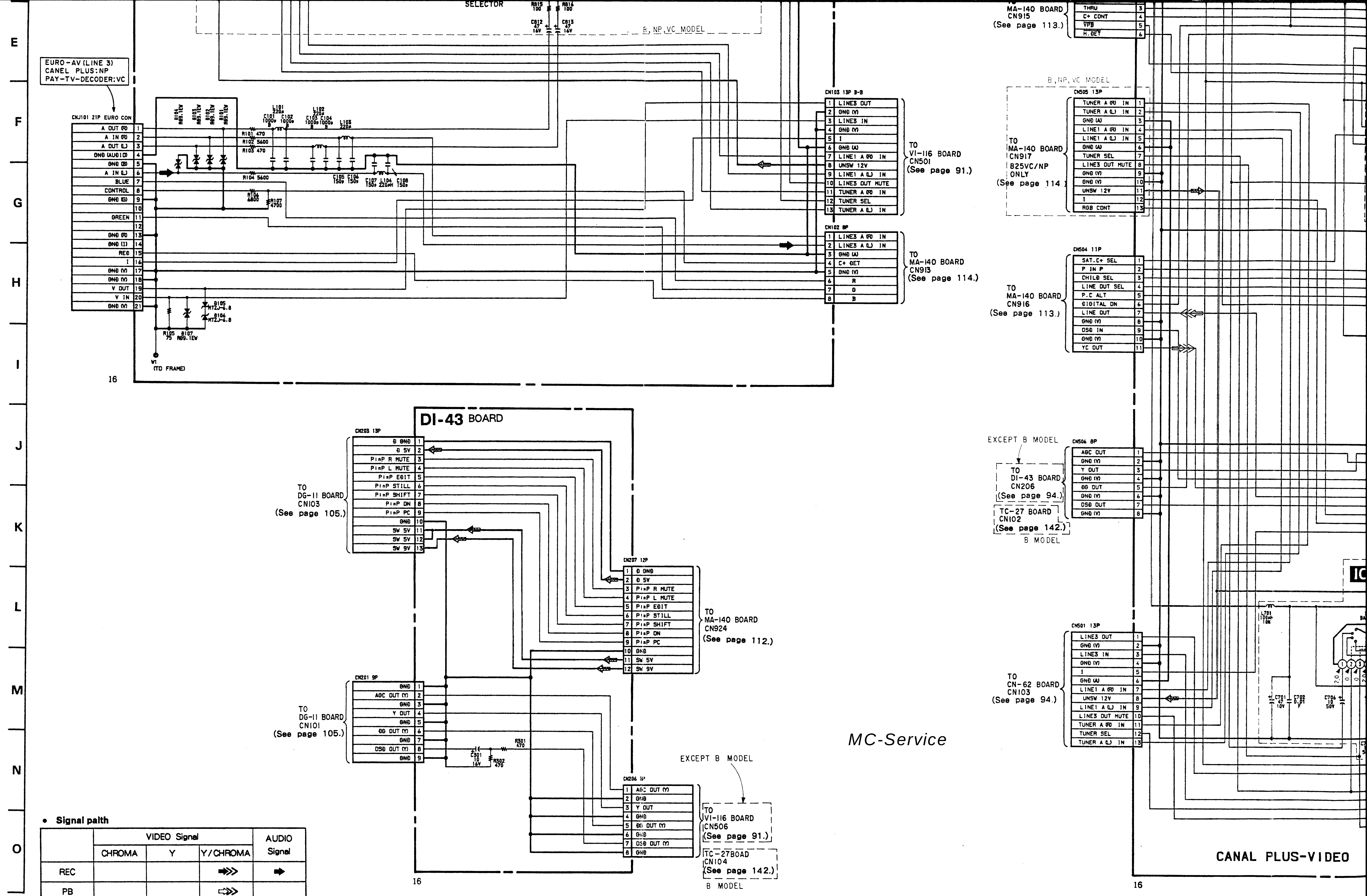
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC		➡	➡	
PB		⇨	⇨	

VI-116 (VIDEO INTERFACE) , CN-62(VIDEO/AUDIO INTERFACE), DI-43(RELAY) SCHEMATIC DIAGRAMS

– Ref. No. VI-116 BOARD : 3,000 Series, CN-62 BOARD : 4,000 Series, DI-43 BOARD : 5,000 Series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
CN-62 BOARD
IC801
SELECTOR
IC802
AMP
IC801 TC4053
IC802 BA4558F
B, NP, VC MODEL
EURO-AV (LINE 3)
CANEL PLUS:NP
PAY-TV-DECODER:VC
CNJ101 21P EURO CON
A OUT (R)
A IN (R)
A OUT (L)
GND (AUDIO)
GND (B)
A IN (L)
BLUE
CONTROL
GND (G)
GREEN
GND (R)
GND (I)
RED
I
GND (V)
GND (V)
V OUT
V IN
GND (V)
V1 (TO FRAME)
16
CN103 13P B-B
LINE3 OUT
GND (V)
LINE3 IN
GND (V)
I
GND (A)
LINE1 A (R) IN
UNSW 12V
LINE1 A (L) IN
LINE3 OUT MUTE
TUNER A (R) IN
TUNER SEL
TUNER A (L) IN
TO VI-116 BOARD CN501 (See page 91.)
CN102 8P
LINE3 A (R) IN
LINE3 A (L) IN
GND (A)
C+ DET
GND (V)
R
G
B
TO MA-140 BOARD CN913 (See page 114.)
DI-43 BOARD
CN203 13P
D GND
D 5V
PinP R MUTE
PinP L MUTE
PinP EDIT
PinP STILL
PinP SHIFT
PinP ON
PinP PC
GND
SW 5V
SW 5V
TO DG-11 BOARD CN103 (See page 105.)
VI-116 BOARD
CN507 3P
LINE2 IN
GND (V)
GND (V)
TO MF-170 BOARD CN303 (See page 133.)
CN502 12P
UNSW 6V
TUNER
GND (V)
LINE1 IN
GND (V)
YC IN
GND (V)
OSD OUT
GND (V)
AV OUT
GND (V)
SW 5V
TO MA-140 BOARD CN914 (See page 113.)
CN503 6P
L1 SEL
L2 SEL
THRU
C+ CONT
VPB
H.DET
TO MA-140 BOARD CN915 (See page 113.)
B, NP, VC MODEL
CN505 13P
TUNER A (R) IN
TUNER A (L) IN
GND (A)
LINE1 A (R) IN
LINE1 A (L) IN
GND (A)
TUNER SEL
LINE3 OUT MUTE
GND (V)
GND (V)
UNSW 12V
I
RGB CONT
TO MA-140 BOARD CN917 825VC/NP ONLY (See page 114.)
CN504 11P
SAT.C+ SEL
P IN P
CHILD SEL
LINE OUT SEL
P.C ALT
DIGITAL ON
LINE OUT
GND (V)
OSD IN
GND (V)
YC OUT
TO MA-140 BOARD CN916 (See page 113.)
EXCEPT B MODEL
CN506 8P
AGC OUT
GND (V)
Y OUT
GND (V)
DD OUT
GND (V)
OSD OUT
GND (V)
TO DI-43 BOARD CN206 (See page 94.)
TC-27 BOARD CN102 (See page 142.)
B MODEL
Q506 DTA144EK
Q507 DTC144EK
D505 DAN202K
D504 DAN202K
L501 100µH
R514 10k
R515 1k

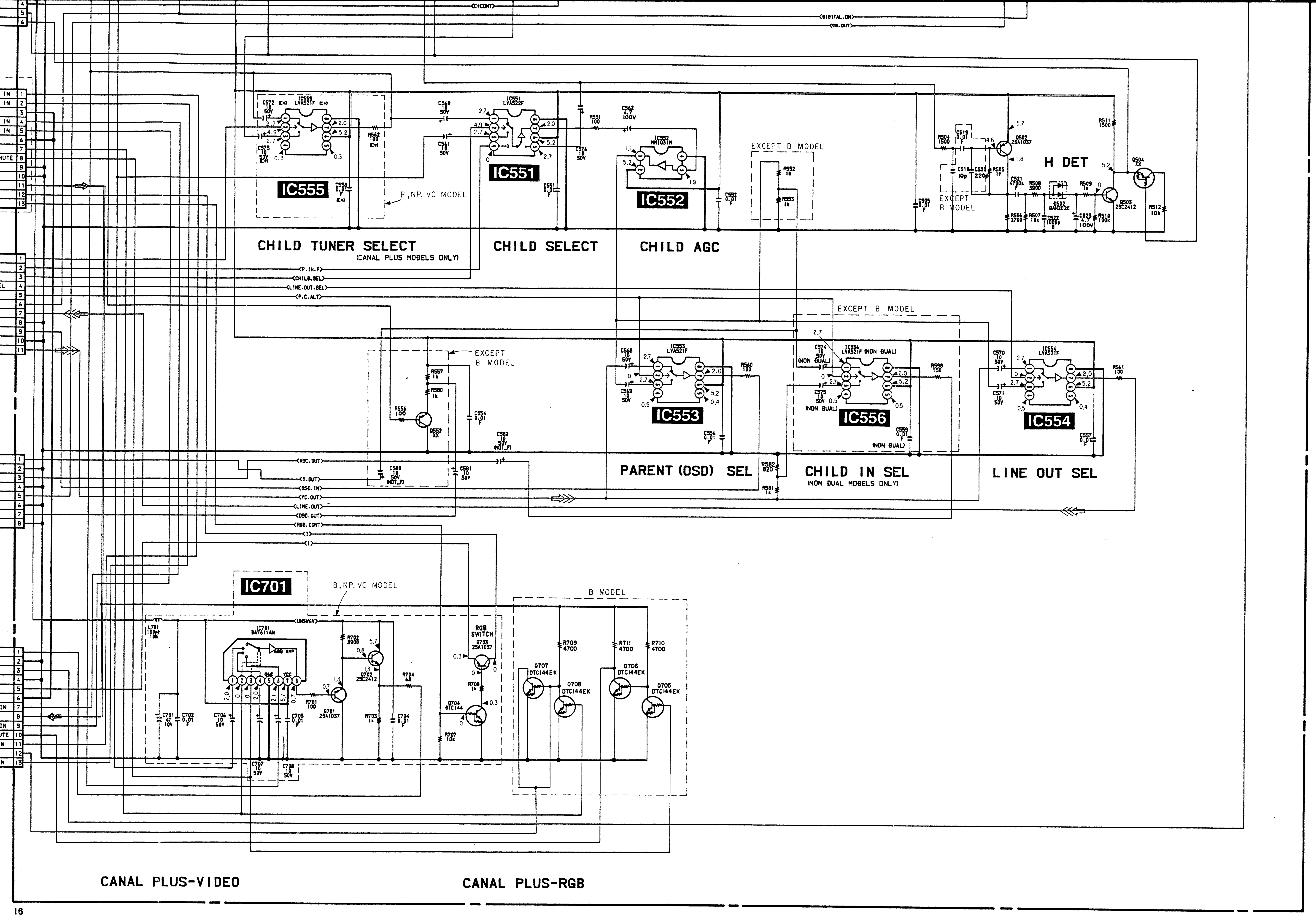

14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
VI-116 BOARD
INPUT SELECT
TUNER SELECT
LINE3 AMP
AV OUT SELECT
IC501
IC501 MM1053XS
IC502
IC502 LVA521F
IC503
IC503 LVA522F
IC504
IC504 MM1031M
Q501 2SC2412
Q506 DTA144EK
Q507 DTC144EK
Q508 DTC144EM
D503 DAP202K
D504 DAN202K
D505 DAN202K
L501 100μH 10%
L502 100μH 10%
B MODEL
EXCEPT B MODEL
(TUNER)
(LINE1)
(LINE2)
(YC.IN)
(SVSV)
(UNSV6V)
(LINE3)
(AV.OUT)
(OSD.OUT)
(THRU)
(C+CONT)
(DIGITAL.ON)
(RB.OUT)
CHILD TUNER SELECT
(CANAL PLUS MODELS ONLY)
CHILD SELECT
CHILD AGC
H DET
IC555
IC555 LVA521F
IC551
IC551 LVA522F
IC552
IC552 MM1031M
Q502 2SA1037
Q503 2SC2412
Q504 XX
D502 DAN202K
B,NP,VC MODEL
EXCEPT B MODEL
(P.IN.P)
(CHILD.SEL)
(LINE.OUT.SEL)
(P.C.ALT)
PARENT (OSD) SEL
CHILD IN SEL
(NON DUAL MODELS ONLY)
LINE OUT SEL
IC553
IC553 LVA521F
IC556
IC556 LVA521F (NON DUAL)
IC554
IC554 LVA521F
Q552 XX
EXCEPT B MODEL
(NON DUAL)
(AGC.OUT)
(Y.OUT)
(OSD.IN)
(YC.OUT)
(LINE.OUT)
(OSD.OUT)
(RGB.CONT)
MUTE
IN


E
F
G
H
I
J
K
L
M
N
O
SELECTOR
R815 100
R816 100
C812 47 16V
C813 47 16V
B,NP,VC MODEL
EURO-AV(LINE 3)
CANEL PLUS:NP
PAY-TV-DECODER:VC
CNJ101 21P EURO CON
1 A OUT (R)
2 A IN (R)
3 A OUT (L)
4 GND (AUDIO)
5 GND (B)
6 A IN (L)
7 BLUE
8 CONTROL
9 GND (G)
10
11 GREEN
12
13 GND (R)
14 GND (I)
15 RED
16 I
17 GND (V)
18 GND (V)
19 V OUT
20 V IN
21 GND (V)
D104 RD9.1EV
D103 RD9.1EV
D102 RD9.1EV
D101 RD9.1EV
L101 220μ
C101 1000p B
C102 1000p B
L102 220μ
C103 1000p B
C104 1000p B
L103 220μ
R101 470
R102 5600
R103 470
R104 5600
C105 150p
C106 150p
C107 150p
L104 220μH
C108 150p
R106 6800
R107 4700
D105 MTZJ-6.8
D106 MTZJ-6.8
R105 75
D107 RD9.1EV
W1 (TO FRAME)
16
CN103 13P B-B
1 LINE3 OUT
2 GND (V)
3 LINE3 IN
4 GND (V)
5 I
6 GND (A)
7 LINE1 A (R) IN
8 UNSW 12V
9 LINE1 A (L) IN
10 LINE3 OUT MUTE
11 TUNER A (R) IN
12 TUNER SEL
13 TUNER A (L) IN
TO VI-116 BOARD CN501 (See page 91.)
CN102 8P
1 LINE3 A (R) IN
2 LINE3 A (L) IN
3 GND (A)
4 C+ DET
5 GND (V)
6 R
7 G
8 B
TO MA-140 BOARD CN913 (See page 114.)
MA-140 BOARD CN915 (See page 113.)
THRU 3
C+ CONT 4
VPB 5
H.DET 6
B,NP,VC MODEL
CN505 13P
TUNER A (R) IN 1
TUNER A (L) IN 2
GND (A) 3
LINE1 A (R) IN 4
LINE1 A (L) IN 5
GND (A) 6
TUNER SEL 7
LINE3 OUT MUTE 8
GND (V) 9
GND (V) 10
UNSW 12V 11
I 12
RGB CONT 13
TO MA-140 BOARD CN917 825VC/NP ONLY (See page 114.)
CN504 11P
SAT.C+ SEL 1
P IN P 2
CHILD SEL 3
LINE OUT SEL 4
P.C ALT 5
DIGITAL ON 6
LINE OUT 7
GND (V) 8
OSD IN 9
GND (V) 10
YC OUT 11
TO MA-140 BOARD CN916 (See page 113.)
DI-43 BOARD
CN203 13P
D GND 1
D 5V 2
PinP R MUTE 3
PinP L MUTE 4
PinP EDIT 5
PinP STILL 6
PinP SHIFT 7
PinP ON 8
PinP PC 9
GND 10
SW 5V 11
SW 5V 12
SW 9V 13
TO DG-11 BOARD CN103 (See page 105.)
CN207 12P
1 D GND
2 D 5V
3 PinP R MUTE
4 PinP L MUTE
5 PinP EDIT
6 PinP STILL
7 PinP SHIFT
8 PinP ON
9 PinP PC
10 GND
11 SW 5V
12 SW 9V
TO MA-140 BOARD CN924 (See page 112.)
CN201 9P
GND 1
AGC OUT (Y) 2
GND 3
Y OUT 4
GND 5
BG OUT (Y) 6
GND 7
OSD OUT (Y) 8
GND 9
TO DG-11 BOARD CN101 (See page 105.)
C301 10 16V
R301 470
R302 470
CN206 8P
1 AGC OUT (Y)
2 GND
3 Y OUT
4 GND
5 BG OUT (Y)
6 GND
7 OSD OUT (Y)
8 GND
EXCEPT B MODEL
TO VI-116 BOARD CN506 (See page 91.)
TC-27BOAD CN104 (See page 142.)
B MODEL
16
EXCEPT B MODEL
CN506 8P
AGC OUT 1
GND (V) 2
Y OUT 3
GND (V) 4
BG OUT 5
GND (V) 6
OSD OUT 7
GND (V) 8
TO DI-43 BOARD CN206 (See page 94.)
TC-27 BOARD CN102 (See page 142.)
B MODEL
CN501 13P
LINE3 OUT 1
GND (V) 2
LINE3 IN 3
GND (V) 4
I 5
GND (A) 6
LINE1 A (R) IN 7
UNSW 12V 8
LINE1 A (L) IN 9
LINE3 OUT MUTE 10
TUNER A (R) IN 11
TUNER SEL 12
TUNER A (L) IN 13
TO CN-62 BOARD CN103 (See page 94.)
L701 100μH 10%
C701 47 10V
C702 0.01 F
C706 10 50V
CANAL PLUS-VIDEO
16

MC-Service

- **Signal palth**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡≫	➡
PB			⇨≫	


IC555
IC551
IC552
IC553
IC556
IC554
IC701
CHILD TUNER SELECT
(CANAL PLUS MODELS ONLY)
CHILD SELECT
CHILD AGC
H DET
EXCEPT B MODEL
B, NP, VC MODEL
PARENT (OSD) SEL
CHILD IN SEL
(NON DUAL MODELS ONLY)
LINE OUT SEL
RGB SWITCH
B MODEL
CANAL PLUS-VIDEO
CANAL PLUS-RGB
16

INTERFACE INTERFACE

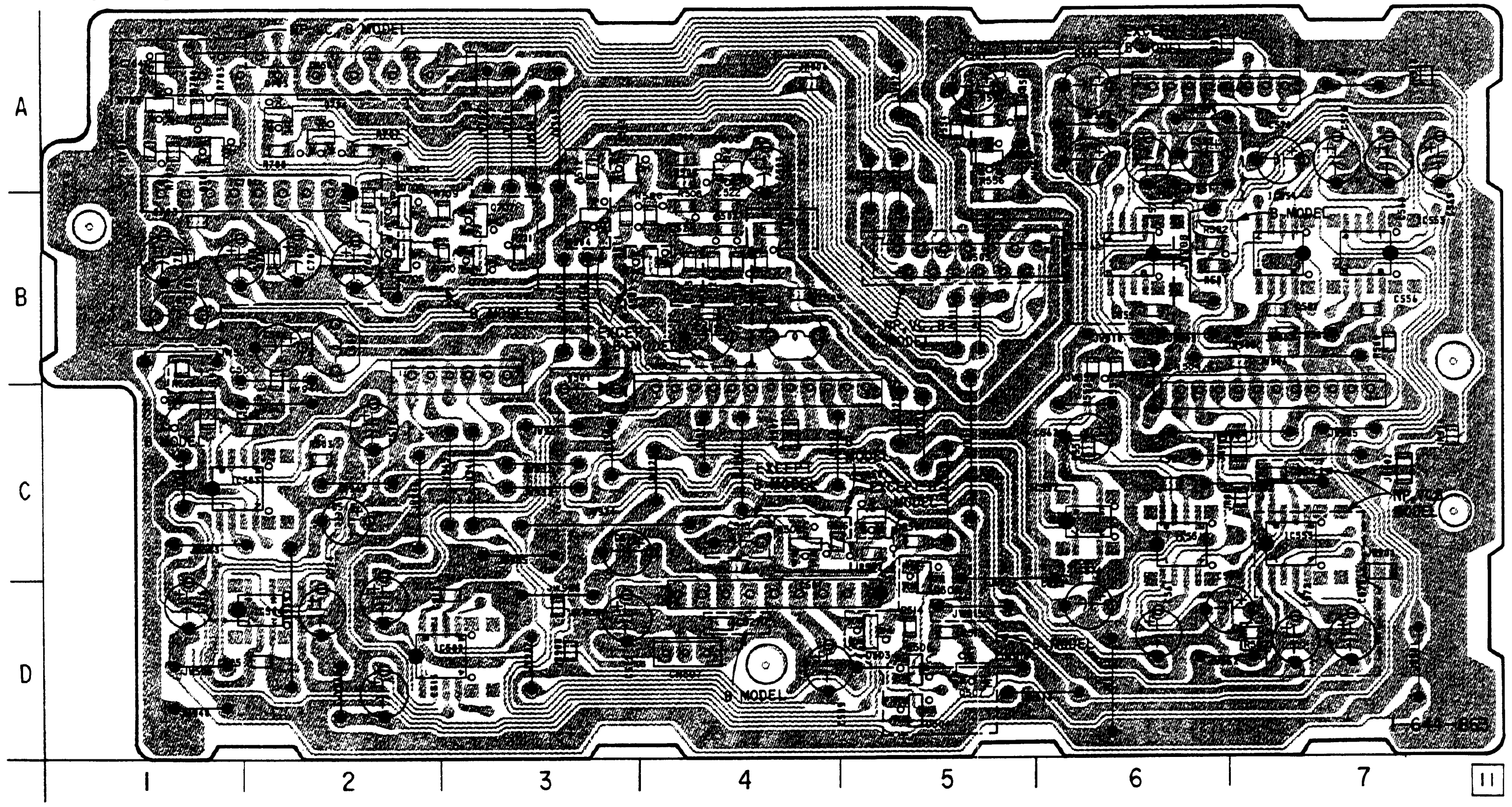
VI-116 (VIDEO INTERFACE) , CN-62(VIDEO/AUDIO INTERFACE), DI-43(RELAY) PRINTED WIRING BOARDS

—Ref. No. VI-116 BOARD : 3,000 Series, CN-62 BOARD : 4,000 Series, DI-43 BOARD : 5,000 Series—

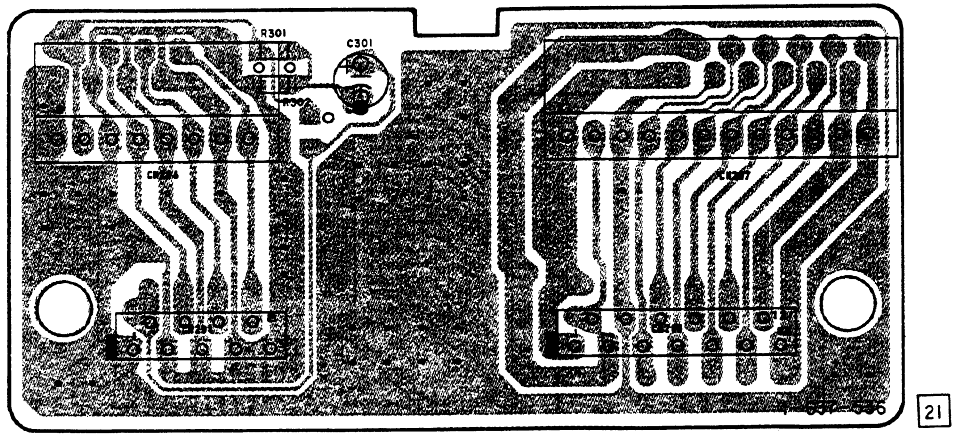
VI-116 BOARD

D501	C-3
D502	A-4
D503	D-5
D504	D-5
D505	D-5
IC501	D-4
IC502	D-3
IC503	C-1
IC504	D-2
IC551	C-6
IC552	C-6
IC553	B-7
IC554	B-7
IC555	C-7
IC556	B-6
IC701	A-2
Q501	C-5
Q502	B-4
Q503	A-4
Q504	B-3
Q506	D-5
Q507	D-5
Q508	C-4
Q552	A-5
Q701	A-1
Q702	A-1
Q703	A-2
Q704	A-2
Q705	B-2
Q706	B-3
Q707	B-3
Q708	B-2

VI-116 BOARD

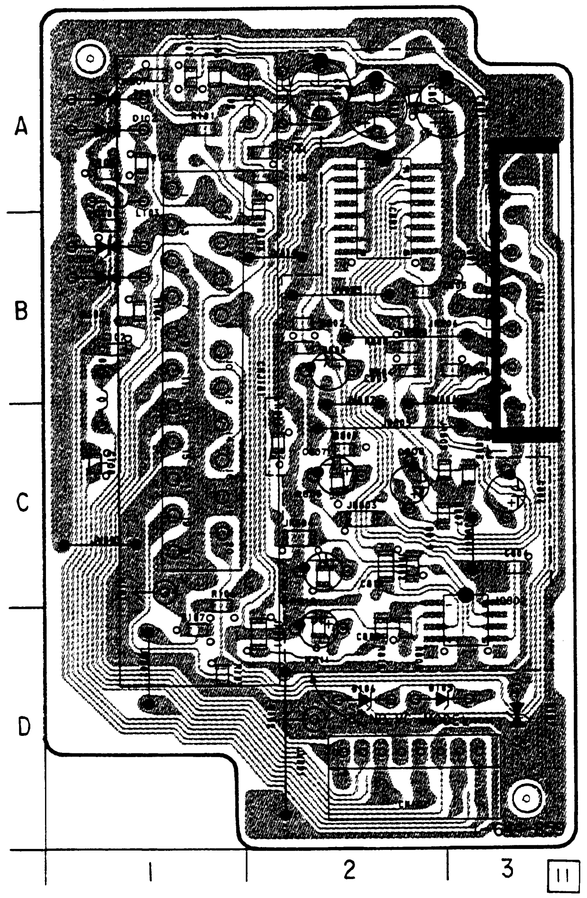


DI-43 BOARD



16

CN-62 BOARD



CNJ101

EURO AV (LINE 3)
CANAL PLUS ←VC MODEL
PAY TV DECODER ←NP MODEL

CN-62 BOARD

D101	A-1
D102	A-1
D103	B-1
D104	B-1
D105	D-2
D106	D-2
D107	D-3
IC801	B-2
IC802	C-3

DIODE

D501	8-719-911-19	1SS119
D502	8-719-911-19	1SS119
D503	8-719-911-19	1SS119 (B)
D504	8-719-911-19	1SS119 (B)
D505	8-719-911-19	1SS119 (B)

IC

IC502	8-759-048-09	MM1148XFF
IC503	8-759-501-21	MM1149XF
IC551	8-759-501-21	MM1149XF
IC553	8-759-048-09	MM1148XFF
IC554	8-759-048-09	MM1148XFF
IC555	8-759-048-09	MM1148XFF (NP/VC)
IC556	8-759-048-09	MM1148XFF

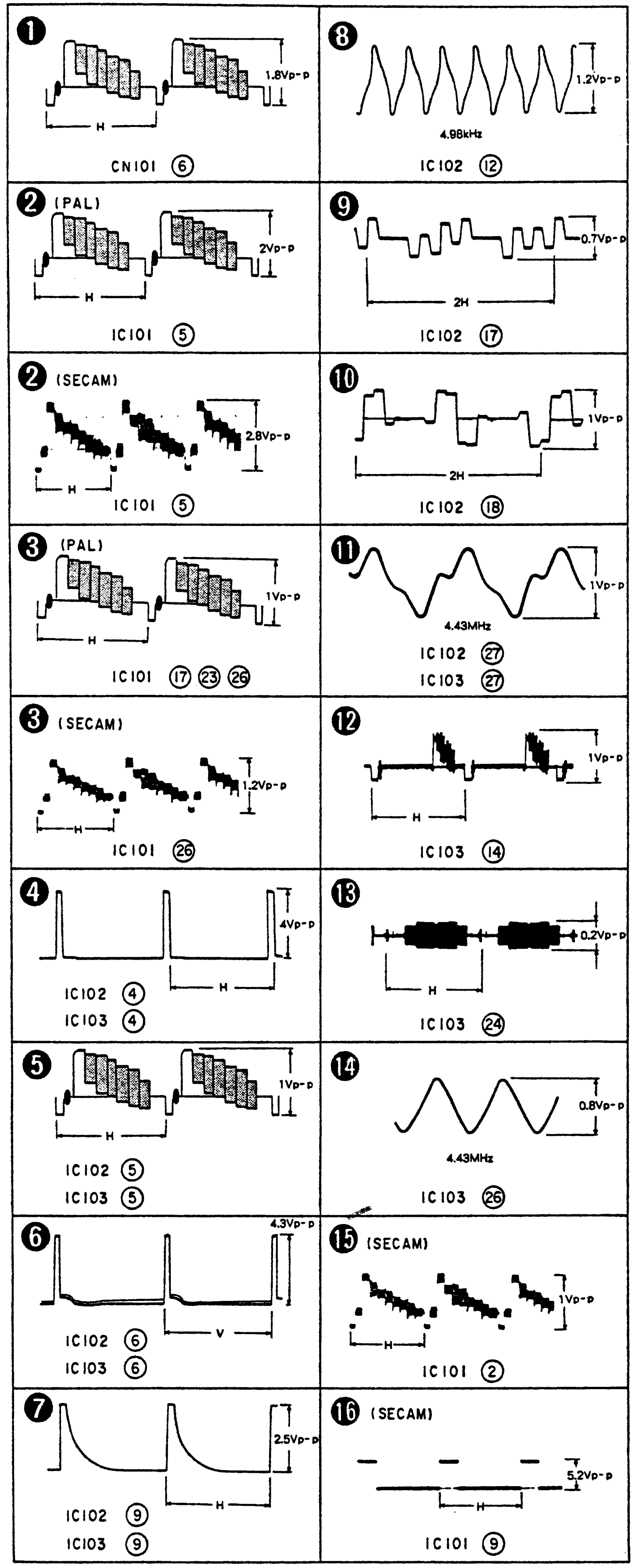
TRANSISTOR

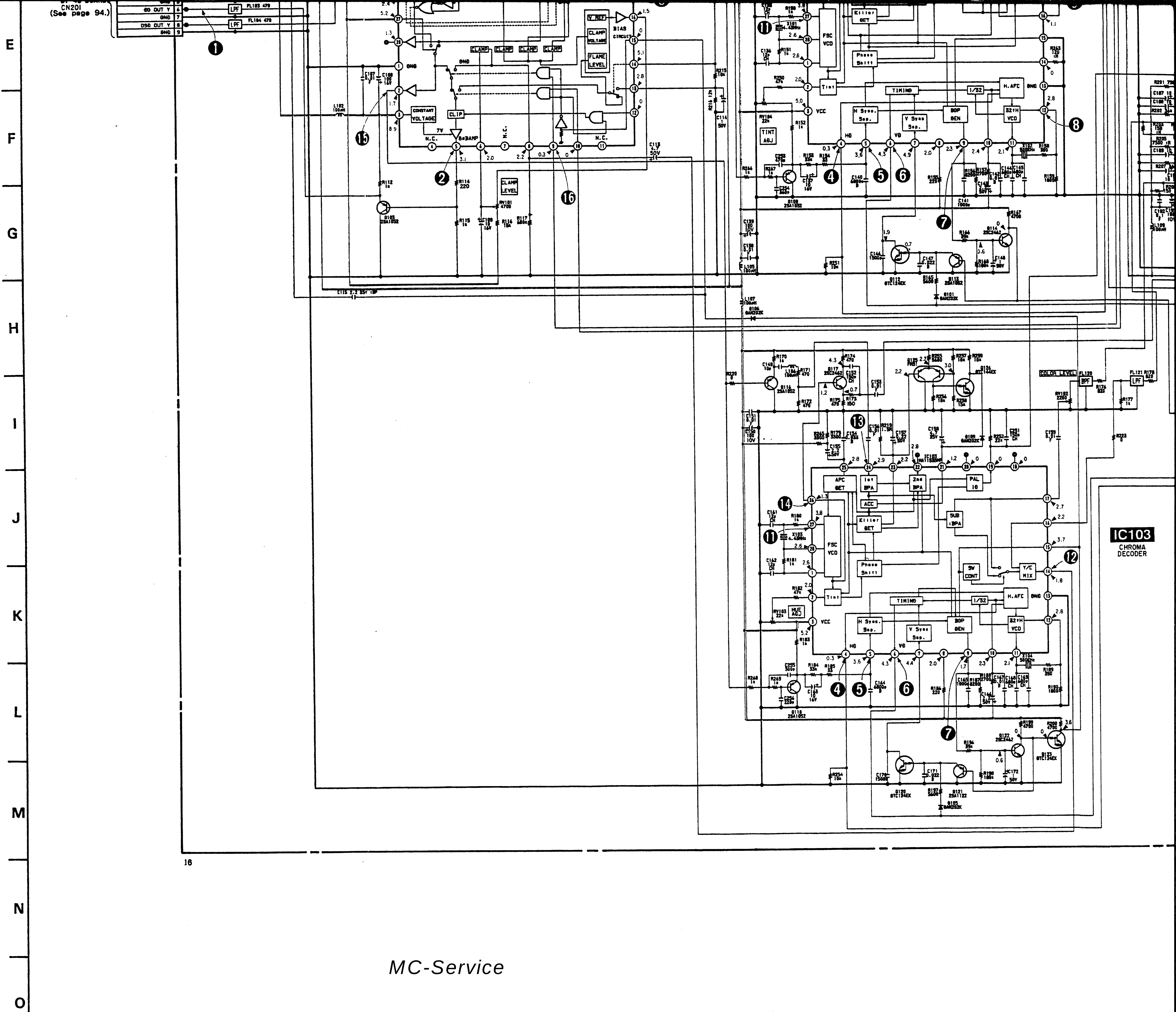
Q501	8-729-120-28	2SC1623-L5L6
Q502	8-729-216-22	2SA1162
Q503	8-729-120-28	2SC1623-L5L6
Q504	8-729-900-53	DTC114EK
Q506	8-729-901-06	DTA144EK (B)
Q507	8-729-901-01	DTC144EK (B)
Q508	8-729-901-01	DTC144EK (B)
Q552	8-729-216-22	2SA1162
Q701	8-729-216-22	2SA1162 (NP/VC)
Q702	8-729-120-28	2SC1623-L5L6 (NP/VC)
Q703	8-729-216-22	2SA1162 (NP/VC)
Q704	8-729-901-01	DTC144EK (NP/VC)
Q705	8-729-901-01	DTA144EK (B)
Q706	8-729-901-01	DTA144EK (B)
Q707	8-729-901-01	DTA144EK (B)
Q708	8-729-901-01	DTA144EK (B)

IC

IC802	8-759-909-71	BA4558F (NP/VC)

DG-11 BOARD


❶
1.8Vp-p
H
CN101 ⑥
❷ (PAL)
2Vp-p
H
IC101 ⑤
❷ (SECAM)
2.8Vp-p
H
IC101 ⑤
❸ (PAL)
1Vp-p
H
IC101 ⑰ ㉓ ㉖
❸ (SECAM)
1.2Vp-p
H
IC101 ㉖
❹
4Vp-p
H
IC102 ④
IC103 ④
❺
1Vp-p
H
IC102 ⑤
IC103 ⑤
❻
4.3Vp-p
V
IC102 ⑥
IC103 ⑥
❼
2.5Vp-p
H
IC102 ⑨
IC103 ⑨
❽
1.2Vp-p
4.98kHz
IC102 ⑫
❾
0.7Vp-p
2H
IC102 ⑰
❿
1Vp-p
2H
IC102 ⑱
⓫
1Vp-p
4.43MHz
IC102 ㉗
IC103 ㉗
⓬
1Vp-p
H
IC103 ⑭
⓭
0.2Vp-p
H
IC103 ㉔
⓮
0.8Vp-p
4.43MHz
IC103 ㉖
⓯ (SECAM)
1Vp-p
H
IC101 ②
⓰ (SECAM)
5.2Vp-p
H
IC101 ⑨

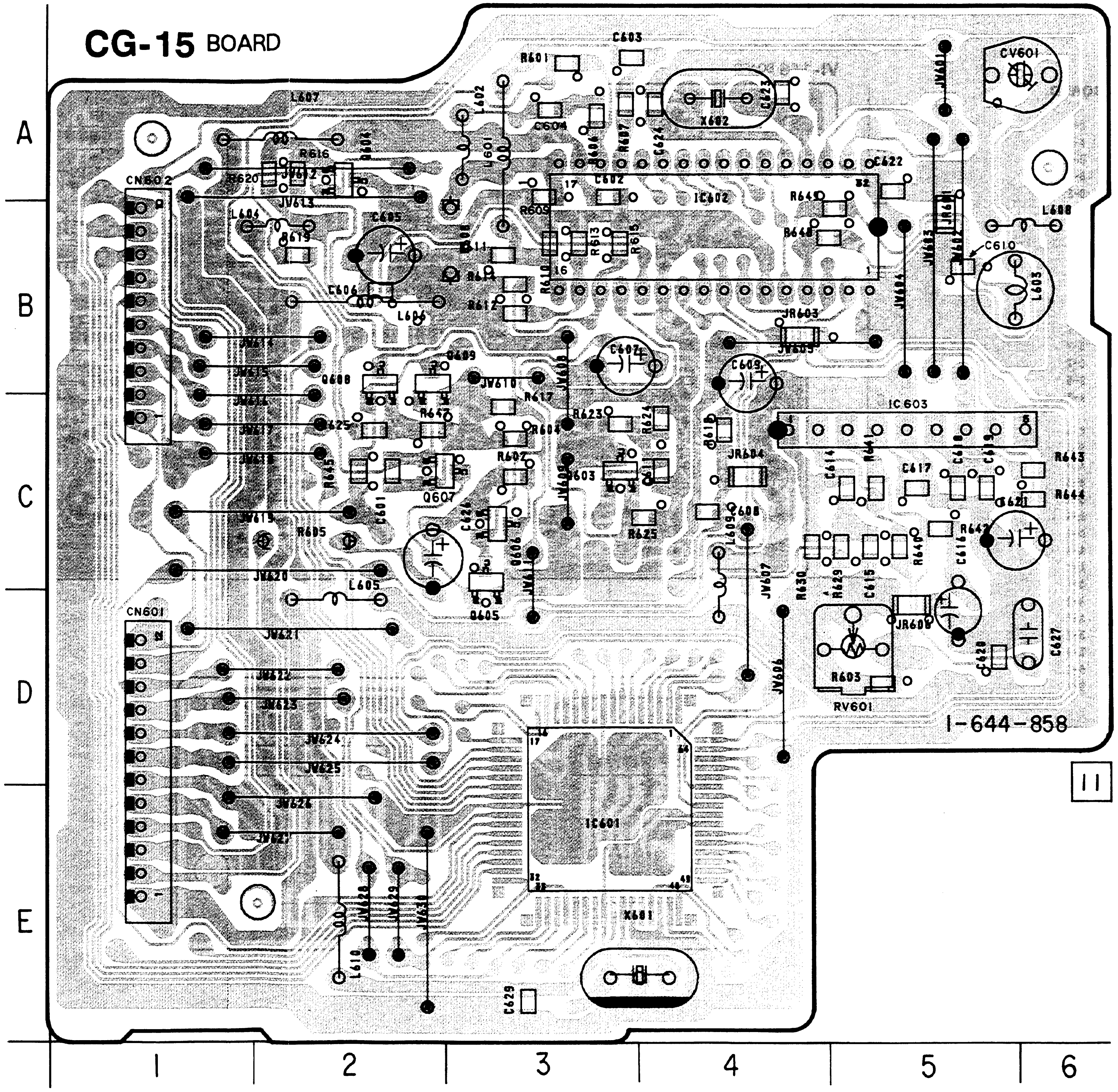

E
F
G
H
I
J
K
L
M
N
O
CN201
(See page 94.)
GO OUT Y
GND
OSD OUT Y
GND
LPF
CONSTANT VOLTAGE
CLIP
CLAMP
CLAMP VOLTAGE
V REF
BIAS CIRCUIT
FLAME LEVEL
CLAMP LEVEL
6dBAMP
N.C.
FSC VCO
Killer DET
Phase Shift
Tint
TINT ADJ
TIMING
1/32
H.AFC
H Sync. Sep.
V Sync Sep.
BGP GEN
32fH VCO
VCC
GND
COLOR LEVEL
BPF
APC DET
1st BPA
2nd BPA
ACC
PAL ID
SUB BPA
SW CONT
Y/C MIX
HUE ADJ
IC103
CHROMA DECODER
16

CG-15 (DISPLAY CONTROLLER) PRINTED WIRING BOARD

– Ref. No. CG-15 BOARD : 6,000 Series –

CG-15 BOARD

IC601	E-3
IC602	B-4
IC603	C-5
Q603	C-3
Q604	A-2
Q605	D-3
Q606	C-3
Q607	C-2
Q608	B-2
Q609	B-3


CG-15 BOARD
A
B
C
D
E
1
2
3
4
5
6
CN602
CN601
IC601
IC602
IC603
X601
X602
CV601
RV601
R603
C603
R601
L607
L602
L601
C604
C624
C623
C622
R645
R648
L608
C610
L603
JW601
JW602
JW603
JW604
R616
R620
JW612
JW613
L604
R619
C605
C606
L606
R611
R612
R609
C602
R610
R613
R615
JR603
JW605
C607
C609
Q608
Q609
JW610
R617
R623
R624
R618
JR604
C614
R641
C617
C618
C619
R643
R644
C621
R642
JW614
JW615
JW616
JW617
JW618
JW619
JW620
R625
R645
C601
Q607
R605
L605
Q603
R607
R606
C626
Q606
R604
JW608
JW609
JW611
Q605
L609
C608
JW607
JW606
R630
R629
C615
R640
C616
JR608
C620
C627
JW621
JW622
JW623
JW624
JW625
JW626
JW627
L610
JW628
JW629
JW630
C629
1-644-858
11

16

IC

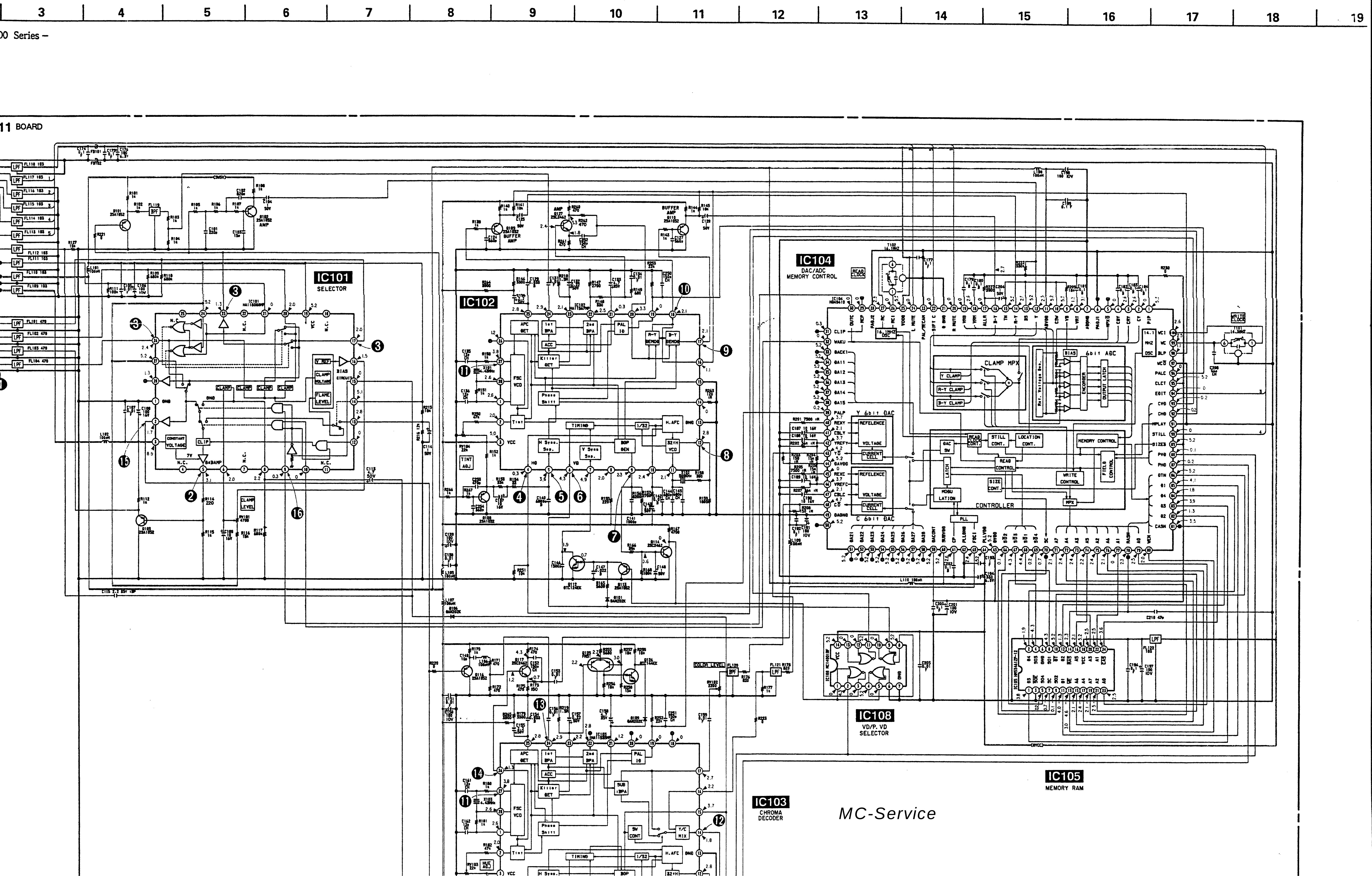
IC601 8-759-078-01 uPD78013GC-VSX1760

TRANSISTOR

Q603	8-729-422-28	2SD601A-R
Q604	8-729-422-37	2SB709A-R
Q605	8-729-424-18	UN2113
Q606	8-729-422-28	2SD601A-R
Q607	8-729-421-19	UN2213
Q608	8-729-422-28	2SD601A-R (VC)
Q609	8-729-421-19	UN2213 (VC)

SS) SCHEMATIC DIAGRAM

00 Series –


3
4
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7
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9
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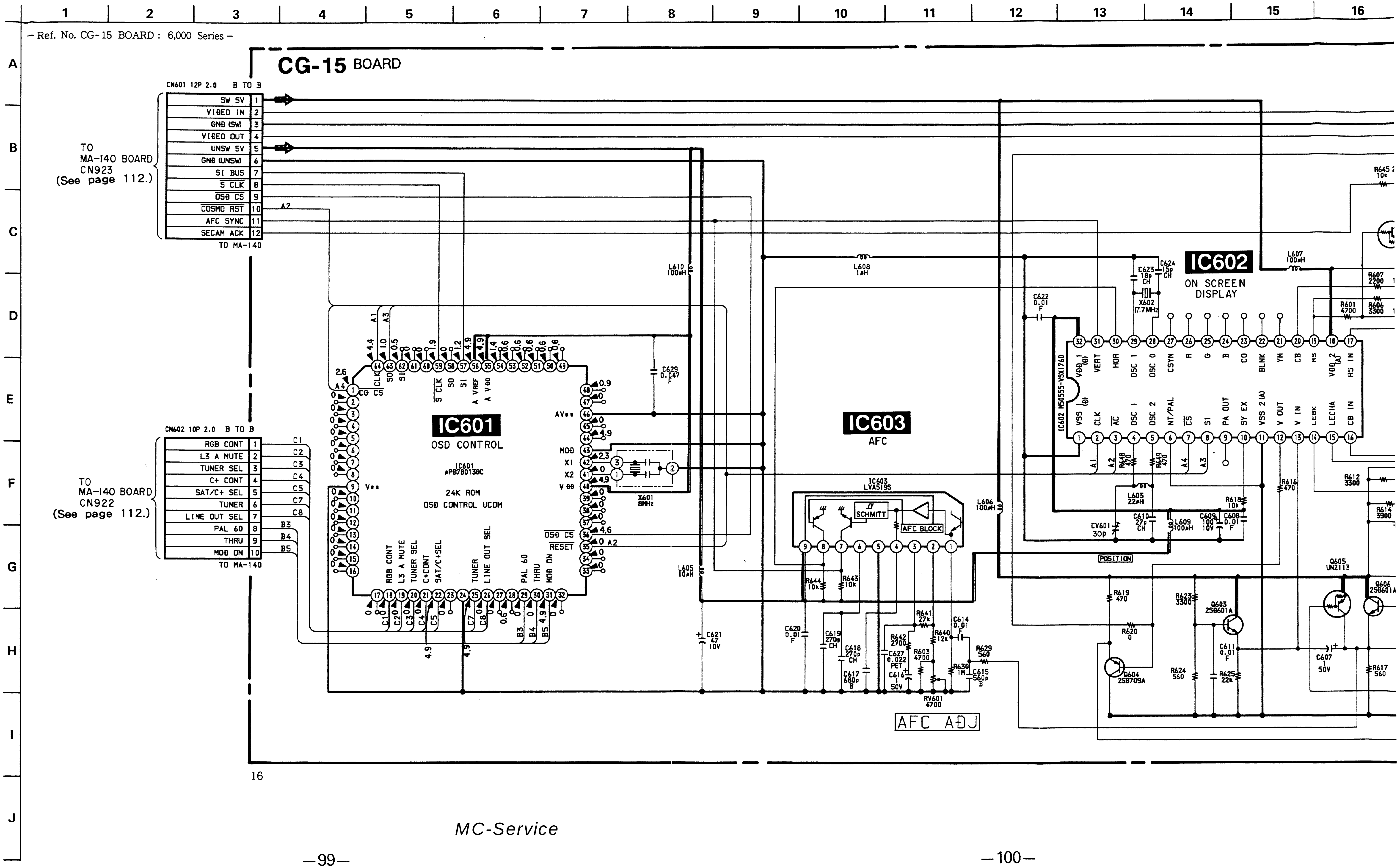
11
12
13
14
15
16
17
18
19
11 BOARD
IC101
SELECTOR
IC102
IC104
DAC/ADC
MEMORY CONTROL
IC108
VD/P. VD
SELECTOR
IC105
MEMORY RAM
IC103
CHROMA
DECODER
MC-Service
BUFFER AMP
AMP
CLAMP MPX
6bit AGC
Y 6bit DAC
C 6bit DAC
CONTROLLER
MEMORY CONTROL
WRITE CONTROL
COLOR LEVEL
WRITE CLOCK

CG-15 (DISPLAY CONTROLLER) SCHEMATIC DIAGRAM

– Ref. No. CG-15 BOARD : 6,000 Series –


1
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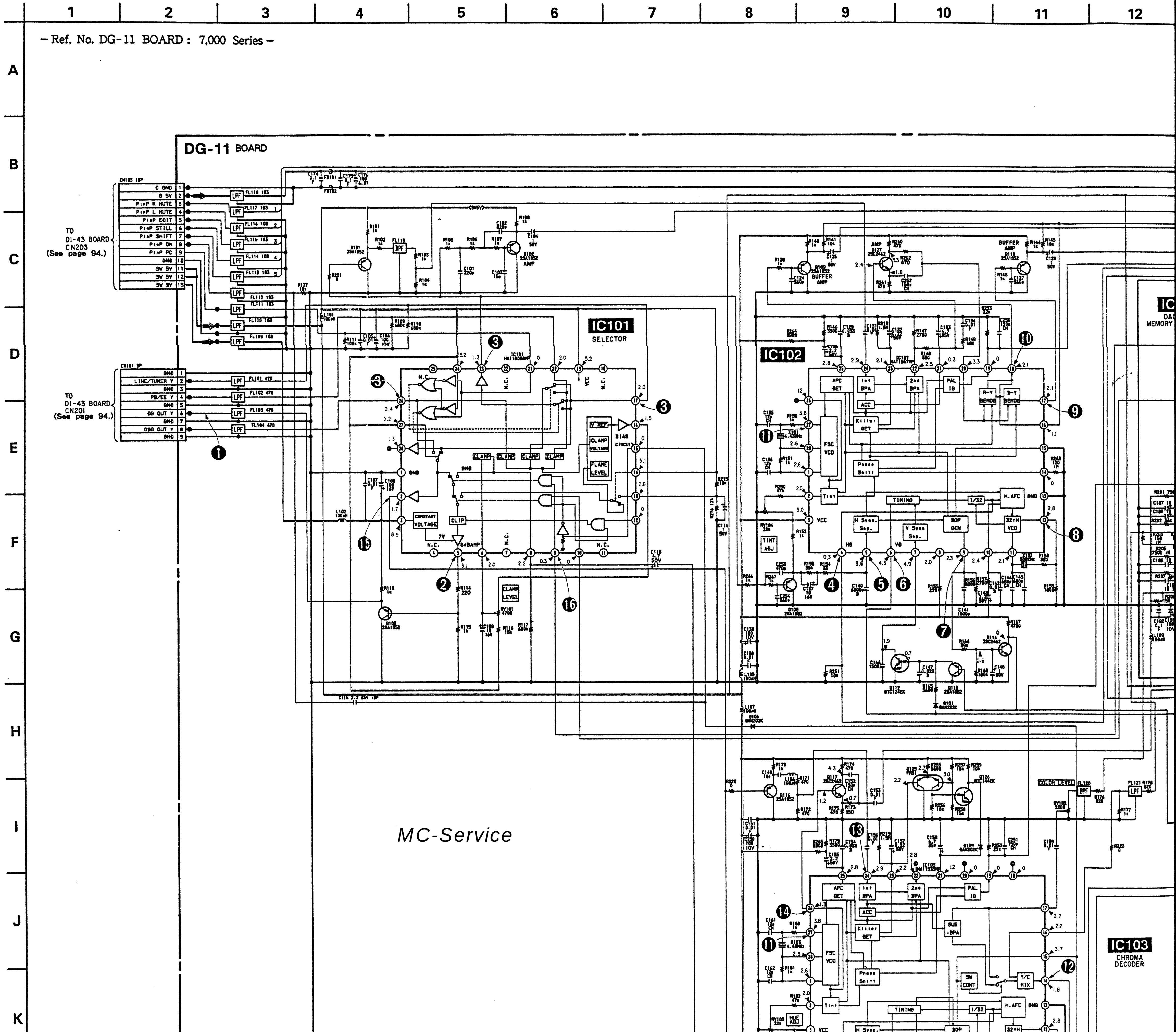
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
CG-15 BOARD
CN601 12P 2.0 B TO B
SW 5V 1
VIDEO IN 2
GND (SW) 3
VIDEO OUT 4
UNSW 5V 5
GND (UNSW) 6
SI BUS 7
S CLK 8
OSD CS 9
COSMO RST 10
AFC SYNC 11
SECAM ACK 12
TO MA-140
TO MA-140 BOARD CN923 (See page 112.)
CN602 10P 2.0 B TO B
RGB CONT 1
L3 A MUTE 2
TUNER SEL 3
C+ CONT 4
SAT/C+ SEL 5
TUNER 6
LINE OUT SEL 7
PAL 60 8
THRU 9
MOD ON 10
TO MA-140
TO MA-140 BOARD CN922 (See page 112.)
C1
C2
C3
C4
C5
C7
C8
B3
B4
B5
A1
A2
A3
IC601
OSD CONTROL
IC601 μPD78013GC
24K ROM
OSD CONTROL UCOM
CLK
CG CS
SO
SI
S CLK
A VREF
A VDD
AVss
MOD
X1
X2
V DD
Vss
OSD CS
RESET
RGB CONT
L3 A MUTE
TUNER SEL
C+CONT
SAT/C+SEL
TUNER
LINE OUT SEL
PAL 60
THRU
MOD ON
X601 8MHz
C629 0.047 F
L610 100μH
L605 10μH
C621 47 10V
L608 1μH
IC603
AFC
IC603 LVA519S
SCHMITT
AFC BLOCK
R644 10k
R643 10k
C620 0.01 F
C619 270p CH
C618 270p CH
C617 680p B
R642 2700
C627 0.022 PET
C616 1 50V
R641 27k
R640 12k
R603 4700
C614 0.01 F
R629 560
R630 1M
C615 560p B
RV601 4700
AFC ADJ
L606 100μH
IC602
ON SCREEN DISPLAY
IC602 M50555-VSX1760
C622 0.01 F
C623 18p CH
C624 15p CH
X602 17.7MHz
L607 100μH
R607 2200
R601 4700
R606 3300
R645 10k
VDD 1 (D)
VERT
HOR
OSC 1
OSC 0
CSYN
R
G
B
CO
BLNK
YM
CB
RS
VDD 2 (A)
RS IN
VSS 1 (D)
CLK
AC
OSC 1
OSC 2
NT/PAL
CS
SI
PA OUT
SY EX
VSS 2 (A)
V OUT
V IN
LEBK
LECHA
CB IN
R648 470
R649 470
L603 22μH
C610 27p CH
L609 100μH
C609 100 10V
C608 0.01 F
R618 10k
R616 470
CV601 30p
POSITION
R612 3300
R614 3900
R619 470
R620 0
Q604 2SB709A
R623 3300
Q603 2SB601A
C611 0.01 F
R624 560
R625 22k
Q605 UN2113
Q606 2SB601A
C607 1 50V
R617 560
16

MC-Service

DG-11 (DIGITAL PICTURE PROCESS) SCHEMATIC DIAGRAM

– Ref. No. DG-11 BOARD : 7,000 Series –


1
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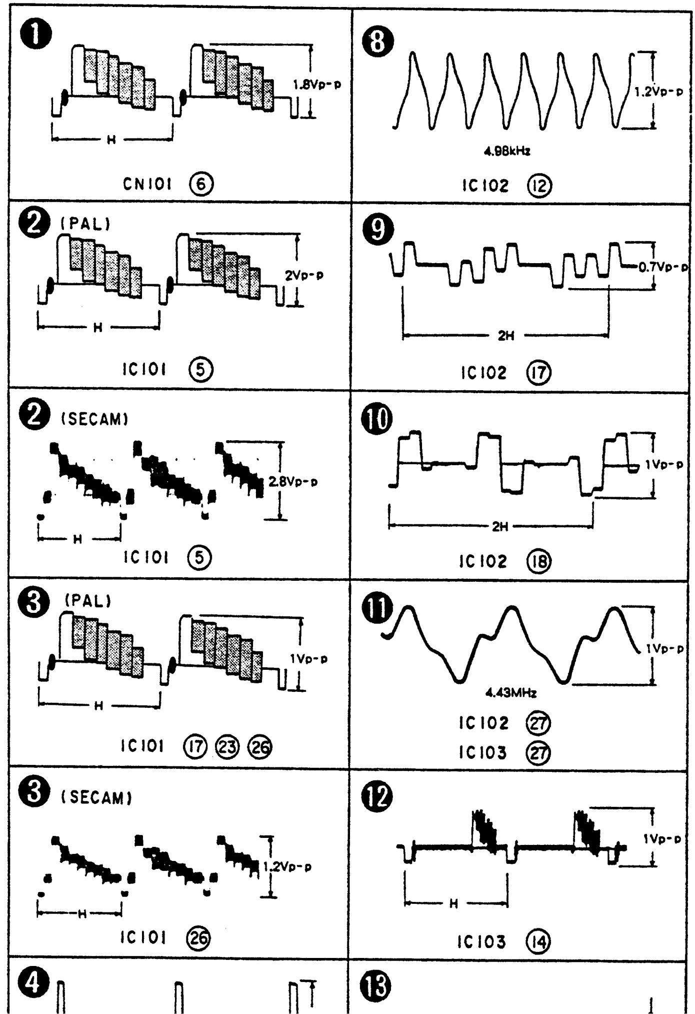
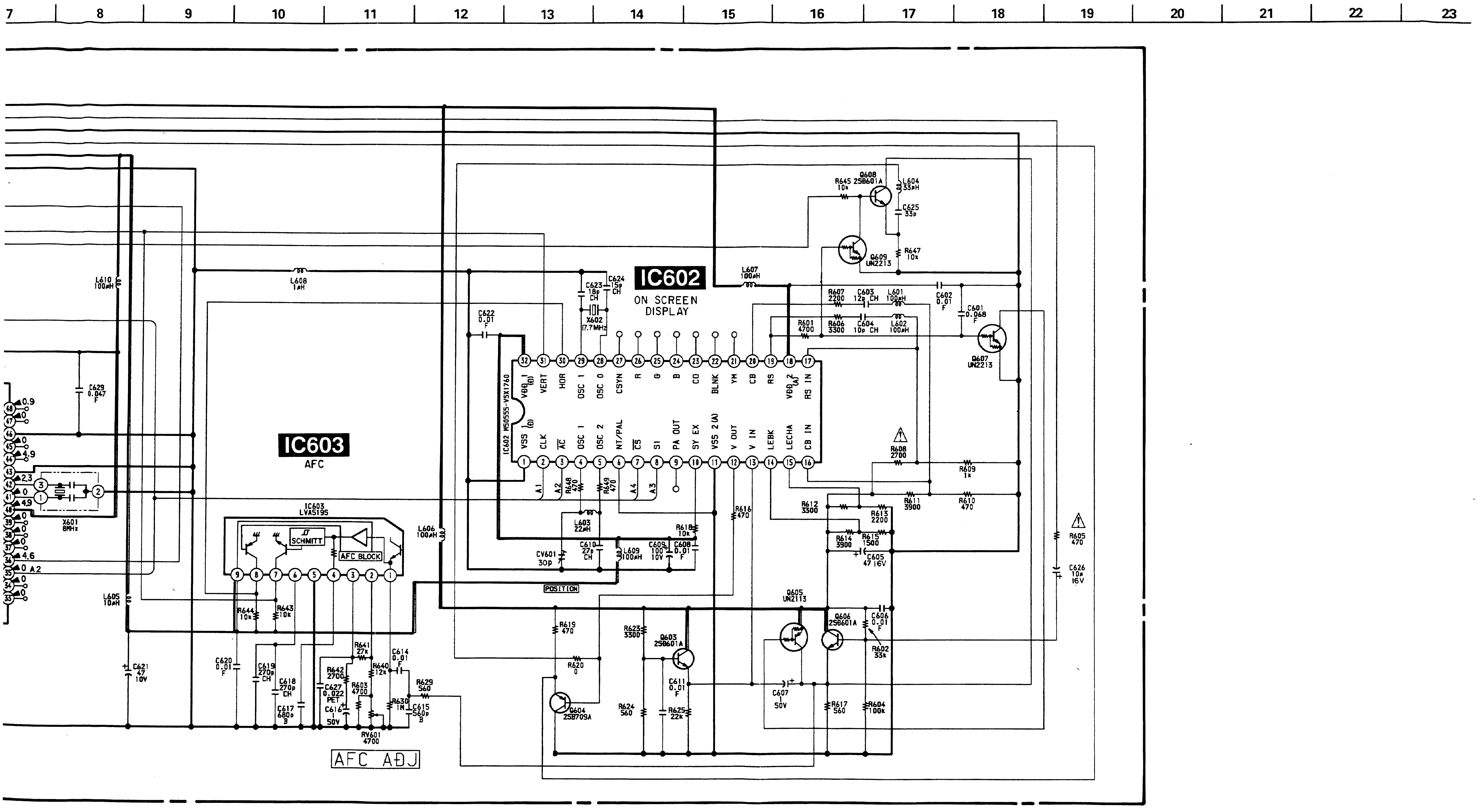
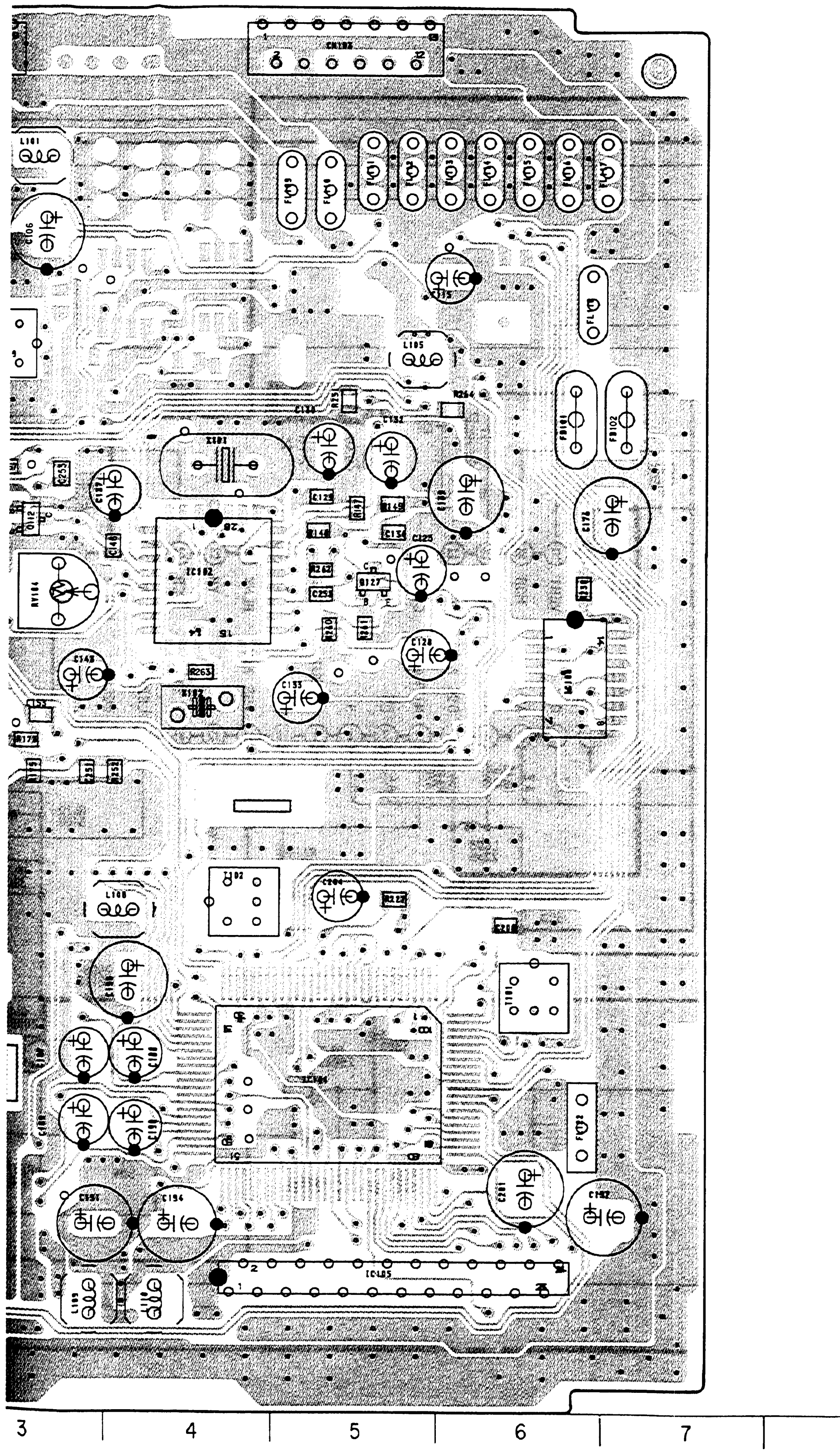
9
10
11
12
A
B
C
D
E
F
G
H
I
J
K
DG-11 BOARD
CN103 13P
TO DI-43 BOARD CN203 (See page 94.)
G GND
D 5V
PinP R MUTE
PinP L MUTE
PinP EDIT
PinP STILL
PinP SHIFT
PinP ON
PinP PC
GND
SW 5V
SW 5V
SW 9V
CN101 9P
TO DI-43 BOARD CN201 (See page 94.)
GND
LINE/TUNER Y
GND
PB/EE Y
GND
GG OUT Y
GND
DSG OUT Y
GND
LPF
BPF
IC101 SELECTOR
IC101 HA11800AMP
CONSTANT VOLTAGE
CLIP
CLAMP
CLAMP VOLTAGE
FLAME LEVEL
V REF
BIAS CIRCUIT
CLAMP LEVEL
6dBAMP
N.C.
VCC
Q101 2SA1052
Q102 2SA1052 AMP
Q103 2SA1052
IC102
APC DET
1st BPA
2nd BPA
PAL ID
R-Y DEMOD
B-Y DEMOD
ACC
Killer DET
Phase Shift
FSC VCO
Tint
TINT ADJ
TIMING
1/32
H.AFC
32fH VCO
H Sync. Sep.
V Sync Sep.
BGP GEN
Q109 2SA1052 BUFFER AMP
AMP Q127 2SC2462
BUFFER AMP Q115 2SA1052
Q108 2SA1052
Q114 2SC2462
Q113 2SA1052
Q112 DTC124EK
D101 MA152WK
IC103 CHROMA DECODER
SUB BPA
SW CONT
Y/C MIX
Q116 2SA1052
Q117 2SC2462
COLOR LEVEL
RV103 HUE ADJ
IC DAC MEMORY

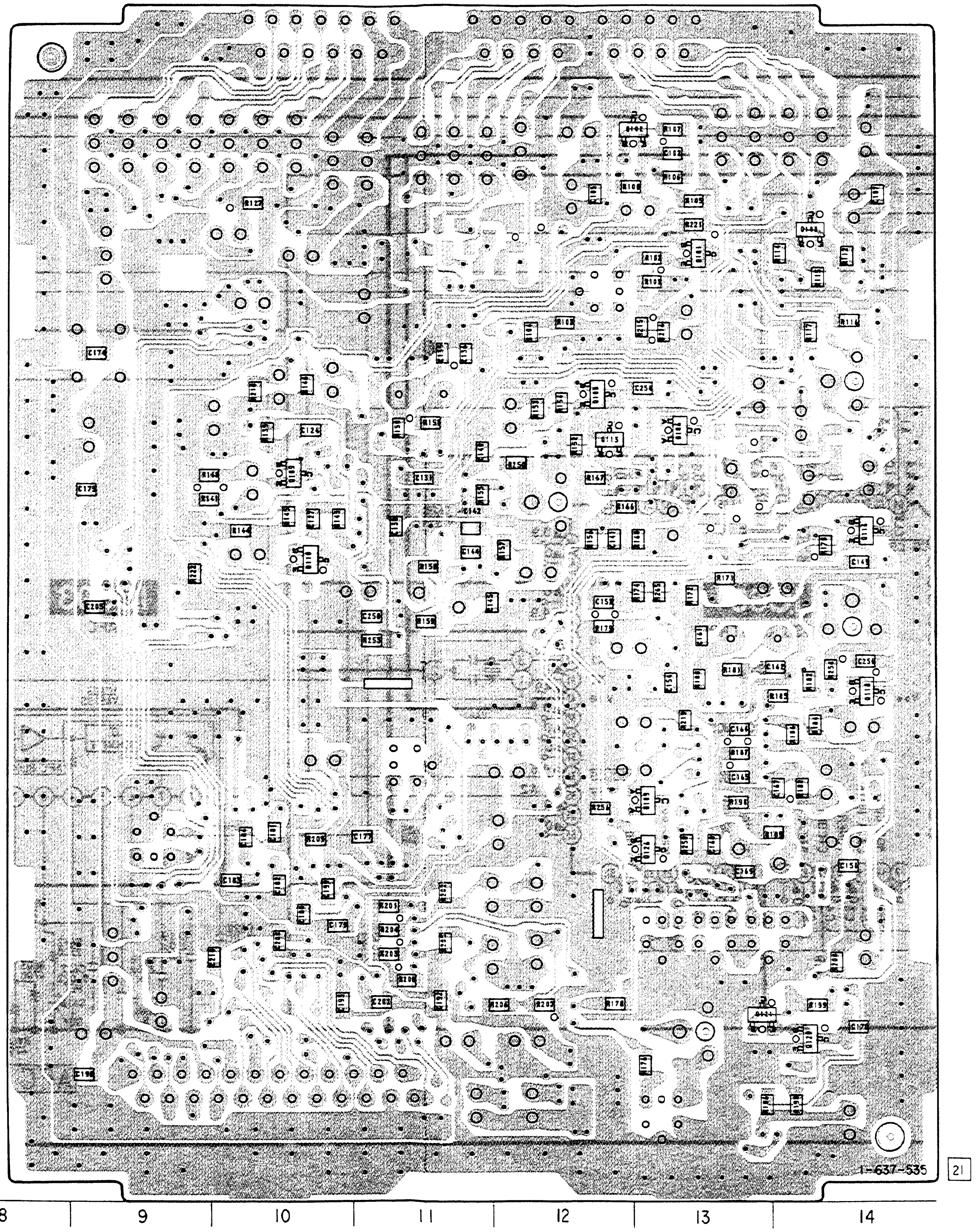
DG-11 BOARD


❶
1.8Vp-p
H
CN101 ⑥
❽
1.2Vp-p
4.98kHz
IC102 ⑫
❷ (PAL)
2Vp-p
H
IC101 ⑤
❾
0.7Vp-p
2H
IC102 ⑰
❷ (SECAM)
2.8Vp-p
H
IC101 ⑤
❿
1Vp-p
2H
IC102 ⑱
❸ (PAL)
1Vp-p
H
IC101 ⑰ ㉓ ㉖
⓫
1Vp-p
4.43MHz
IC102 ㉗
IC103 ㉗
❸ (SECAM)
1.2Vp-p
H
IC101 ㉖
⓬
1Vp-p
H
IC103 ⑭
❹
⓭


7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
IC602
ON SCREEN DISPLAY
IC602 M50555-VSX1760
VDD 1 (D)
VERT
HOR
OSC 1
OSC 0
CSYN
R
G
B
CO
BLNK
YM
CB
RS
VDD 2 (A)
RS IN
VSS 1 (D)
CLK
AC
OSC 1
OSC 2
NT/PAL
CS
S1
PA OUT
SY EX
VSS 2 (A)
V OUT
V IN
LEBK
LECHA
CB IN
IC603
AFC
IC603 LVA519S
SCHMITT
AFC BLOCK
AFC ADJ
POSITION
X601 8MHz
X602 17.7MHz
Q603 2SB601A
Q604 2SB709A
Q605 UN2113
Q606 2SB601A
Q607 UN2213
Q608 2SB601A
Q609 UN2213
L601 100μH
L602 100μH
L603 22μH
L604 33μH
L605 10μH
L606 100μH
L607 100μH
L608 1μH
L609 100μH
L610 100μH
C601 0.068 F
C602 0.01 F
C603 12p CH
C604 10p CH
C605 47 16V
C606 0.01 F
C607 1 50V
C608 0.01 F
C609 100 10V
C610 27p CH
C611 0.01 F
C614 0.01 F
C615 560p B
C616 1 50V
C617 680p B
C618 270p CH
C619 270p CH
C620 0.01 F
C621 47 10V
C622 0.01 F
C623 18p CH
C624 15p CH
C625 33p
C626 10μ 16V
C627 0.022 PET
C629 0.047 F
CV601 30p
R601 4700
R602 33k
R603 4700
R604 100k
R605 470
R606 3300
R607 2200
R608 2700
R609 1k
R610 470
R611 3900
R612 3300
R613 2200
R614 3900
R615 1500
R616 470
R617 560
R618 10k
R619 470
R620 0
R623 3300
R624 560
R625 22k
R629 560
R630 1M
R640 12k
R641 27k
R642 2700
R643 10k
R644 10k
R645 10k
R647 10k
R648 470
R649 470
RV601 4700
A1
A2
A3
A4
0.9
4.9
2.3
0
4.6
A2



DG-11 BOARD (CONDUCTOR SIDE)



DG-11 BOARD

D101	C-2
D105	H-2
D106	D-13
D109	F-13
IC101	B-2
IC102	D-4
IC103	F-2
IC104	G-5
IC105	H-5
IC108	E-6
Q101	B-13
Q102	A-13
Q103	B-14
Q108	C-12
Q109	D-10
Q110	E-10
Q112	D-3
Q113	D-12
Q114	D-3
Q116	D-14
Q117	E-3
Q118	E-14
Q120	H-14
Q121	H-13
Q122	H-2
Q123	H-1
Q125	F-3
Q126	F-13
Q127	D-5

DIODE

D101	8-719-400-18	MA152WK
D105	8-719-400-18	MA152WK
D106	8-719-400-18	MA152WK
D109	8-719-400-18	MA152WK

IC

IC104	8-759-322-68	HD49410
IC108	8-759-008-74	MC14001BF

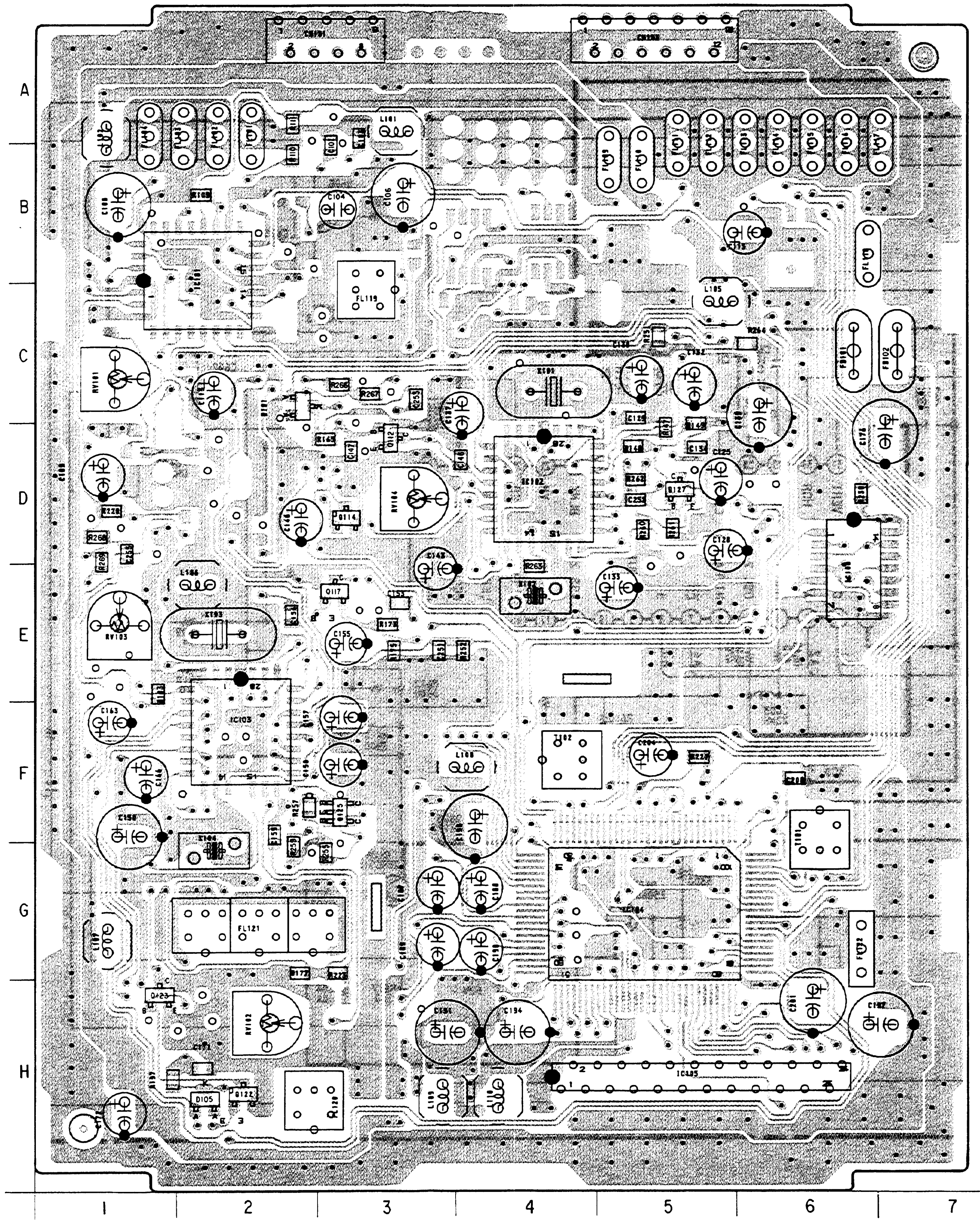
TRANSISTOR

Q101	8-729-305-25	2SA1052-C
Q102	8-729-305-25	2SA1052-C
Q103	8-729-305-25	2SA1052-C
Q108	8-729-305-25	2SA1052-C
Q109	8-729-305-25	2SA1052-C
Q110	8-729-305-25	2SA1052-C
Q112	8-729-901-00	DTC124EK
Q113	8-729-305-25	2SA1052-C
Q114	8-729-230-49	2SC2712-G
Q116	8-729-305-25	2SA1052-C
Q117	8-729-230-49	2SC2712-G
Q118	8-729-305-25	2SA1052-C
Q120	8-729-901-00	DTC124EK
Q121	8-729-305-25	2SA1052-C
Q122	8-729-230-49	2SC2712-G
Q123	8-729-901-00	DTC124EK
Q125	8-729-902-96	FMS1
Q126	8-729-901-01	DTC144EK
Q127	8-729-230-49	2SC2712-G

DG-11 (DIGITAL PICTURE PROCESS) PRINTED WIRING BOARD

– Ref. No. DG-11 BOARD : 7,000 Series –

DG-11 BOARD (COMPONENT SIDE)


A
B
C
D
E
F
G
H
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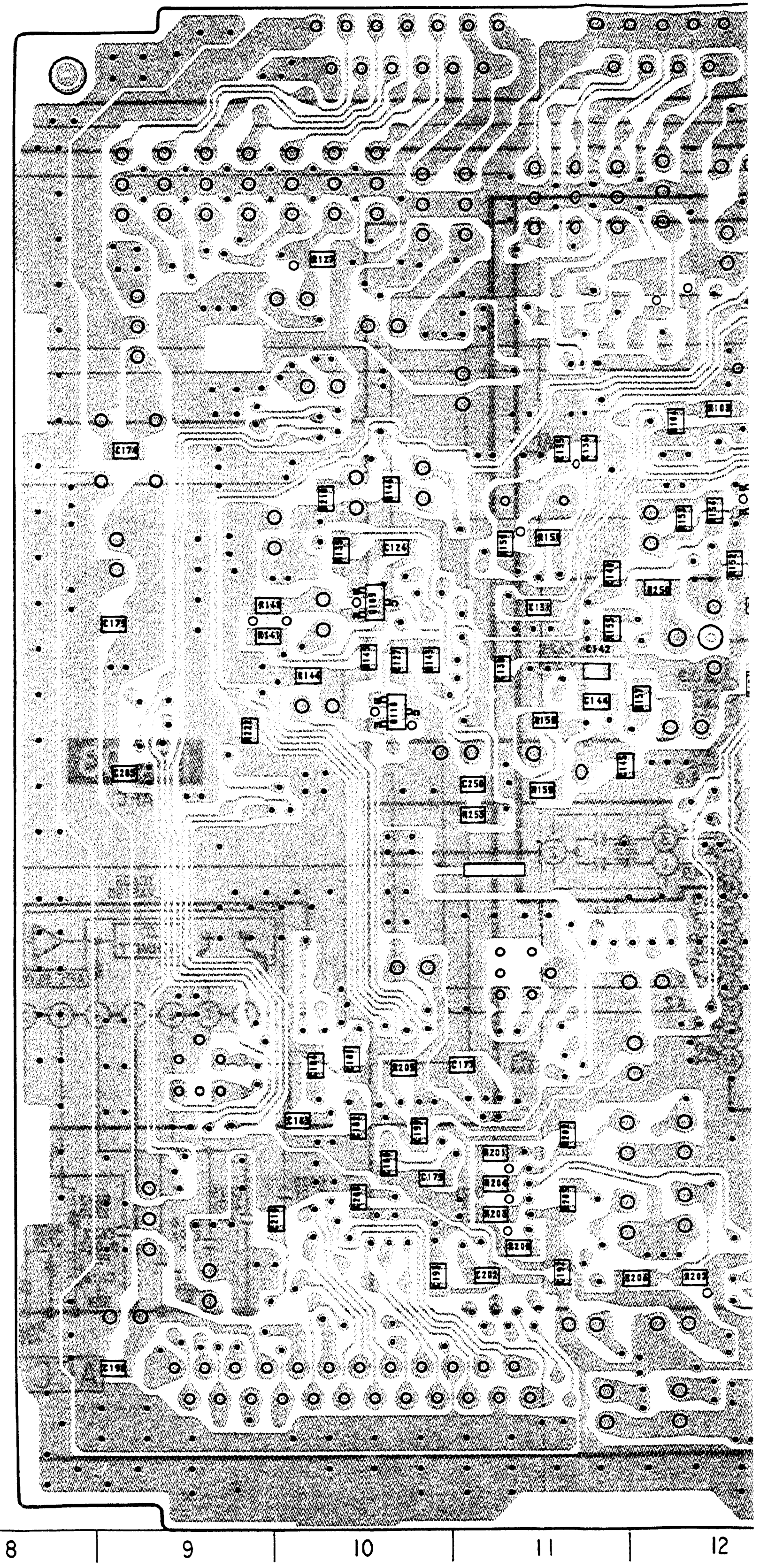
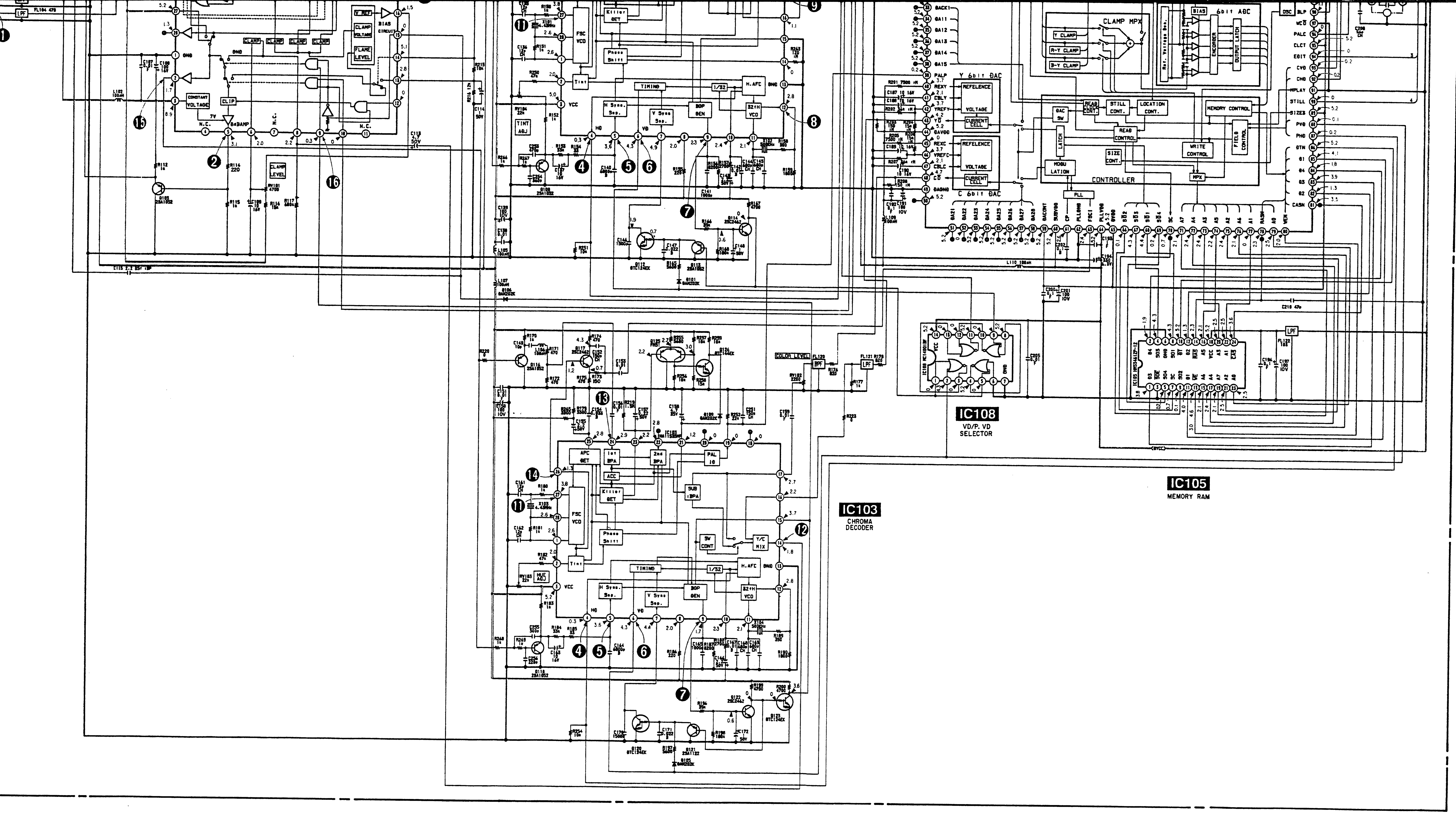
3
4
5
6
7

DG-11 BOARD (CONDUCTOR SIDE)

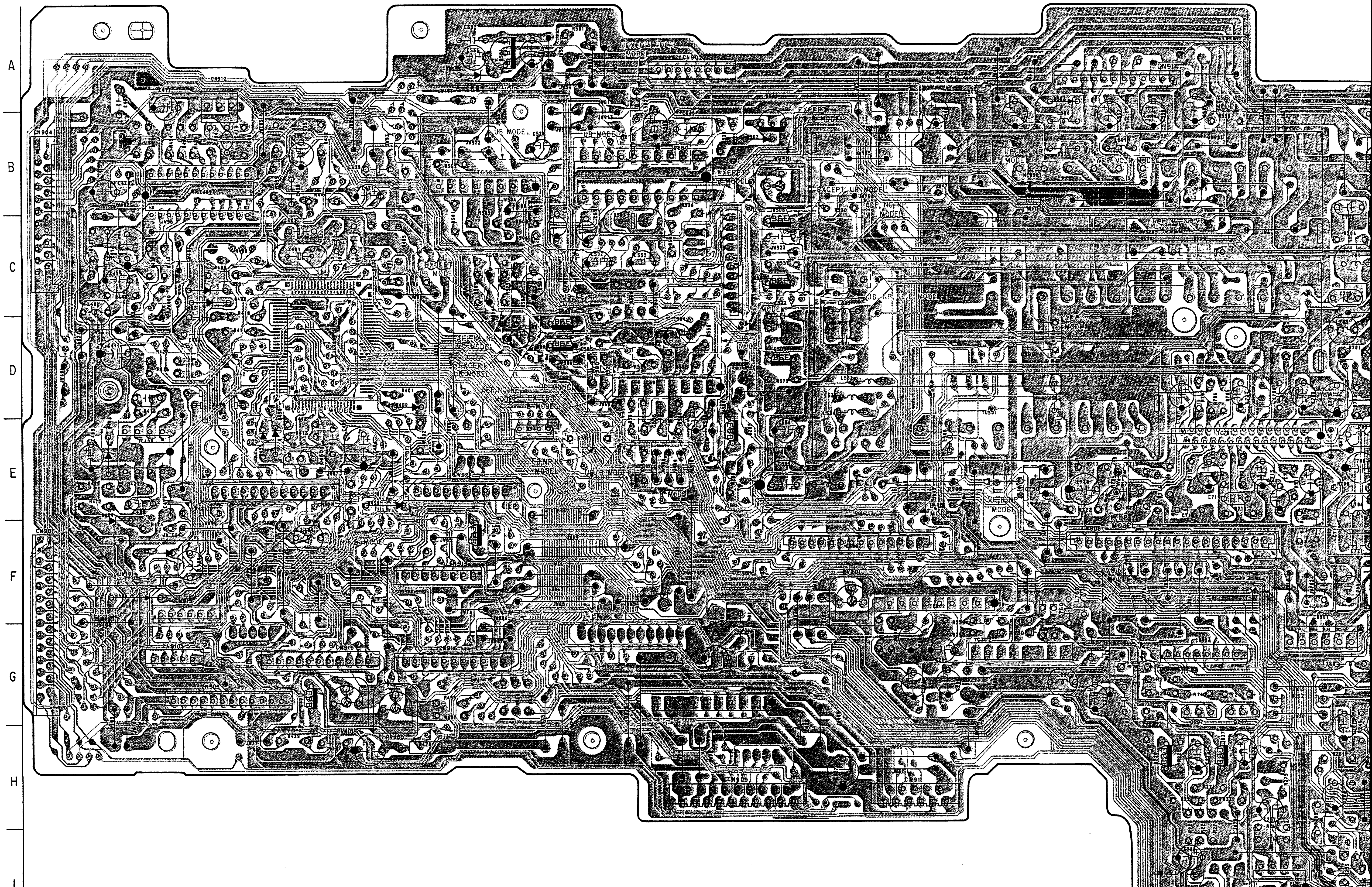



IC103
CHROMA DECODER
IC105
MEMORY RAM
IC108
VD/P. VD SELECTOR
Y 6bit DAC
C 6bit DAC
CONTROLLER
CLAMP MPX
6bit ADC
FSC VCO
Phase Shift
Killer DET
APC DET
1st BPA
2nd BPA
ACC
PAL ID
SUB BPA
Y/C MIX
SW CONT
TIMING
H Sync Sep.
V Sync Sep.
BGP GEN
1/32
H.AFC
32fH VCO
Tint
TINT ADJ
HUE ADJ
COLOR LEVEL
BPF
LPF
CLAMP LEVEL
CONSTANT VOLTAGE
CLIP
V REF
BIAS CIRCUIT
MEMORY CONTROL
WRITE CONTROL
READ CONTROL
STILL CONT.
LOCATION CONT.
FIELD CONTROL
MODULATION
LATCH
PLL
MPX
SIZE CONT.
ENCODER
OUTPUT LATCH

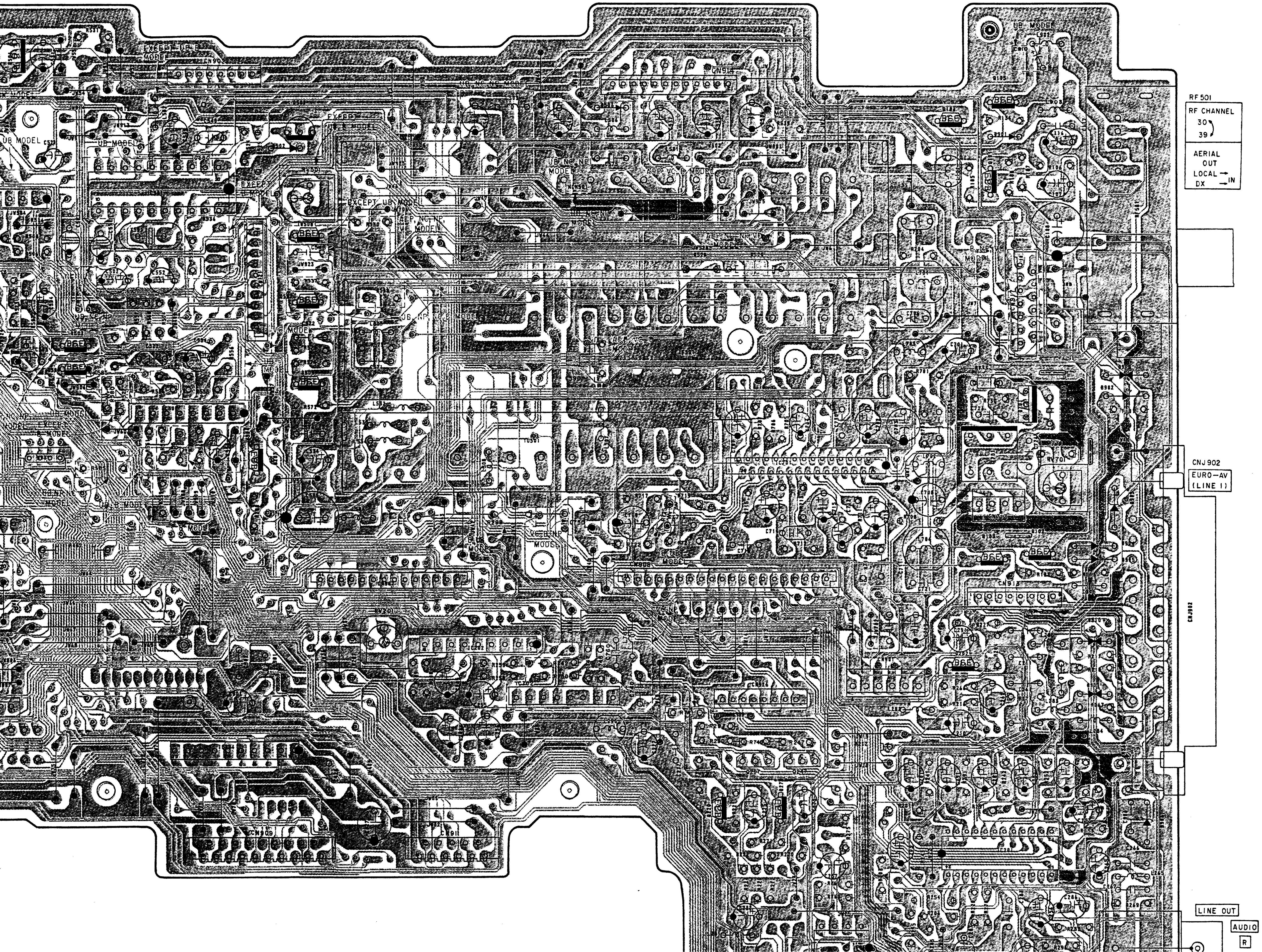
MA-140 (SERVO, SYSTEM CONTROL, MECHANISM DRIVE, AMP), VP-33(SERVO/SYSTEM CONTROL MICROPROCESSOR) PRINTED WIRING BOARDS

– Ref. No. MA-140 BOARD : 8,000 Series, VP-33 BOARD : 9,000 Series –

MA-140 BOARD

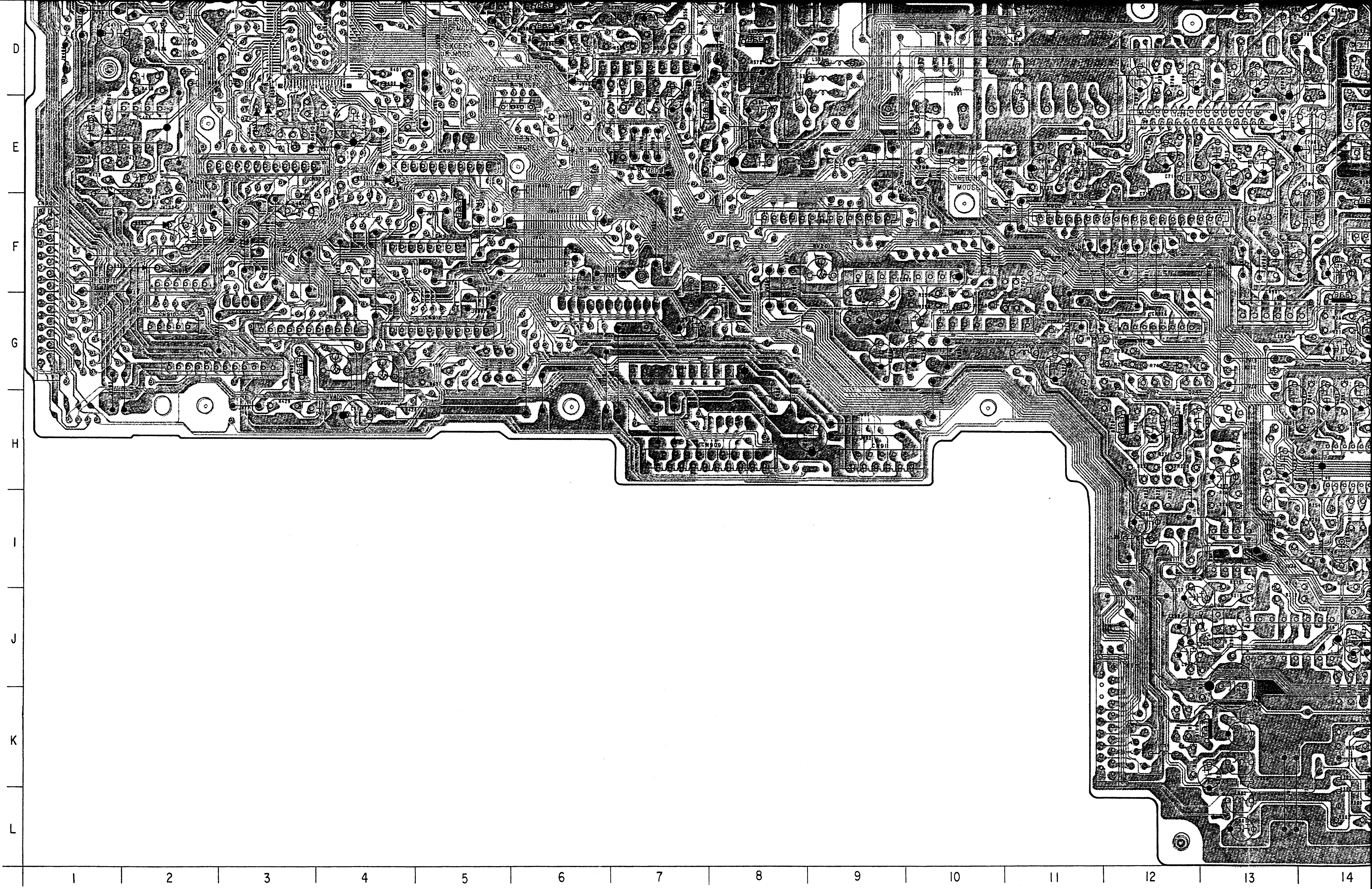

A
B
C
D
E
F
G
H
I
UB MODEL
EXCEPT UB MODEL
UB, NC, NP MODEL

CROPROCESSOR) PRINTED WIRING BOARDS


RF 501
RF CHANNEL
30
39
AERIAL
OUT
LOCAL →
DX → IN
CNJ 902
EURO-AV
(LINE 1)
LINE OUT
AUDIO
R

MA-140 BOARD

D301	K-14	Q101	B-14
D302	K-14	Q102	E-15
D304	K-15	Q103	E-14
D400	D-4	Q104	B-14
D401	C-3	Q105	A-14
D402	C-3	Q109	K-12
D403	E-1	Q202	F-14
D404	E-1	Q203	E-8
D405	F-2	Q220	H-12
D406	F-2	Q247	G-12
D450	D-3	Q270	H-12
D451	E-3	Q297	G-13
D452	E-4	Q301	K-15
D502	B-8	Q302	L-15
D505	A-5	Q303	K-15
D506	A-11	Q304	L-15
D901	B-14	Q305	K-15
D902	D-15	Q306	K-15
D903	E-15	Q401	G-3
D904	E-15	Q447	F-5
D905	F-15	Q450	E-3
D906	H-15	Q501	A-5
D907	K-15	Q502	A-8
D910	F-15	Q503	D-6
D911	G-15	Q504	D-6
D912	J-15	Q505	D-8
D913	D-15	Q507	C-8
		Q508	B-8
IC201	H-14	Q701	D-15
IC202	F-10		


D
E
F
G
H
I
J
K
L
1
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3
4
5
6
7
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9
10
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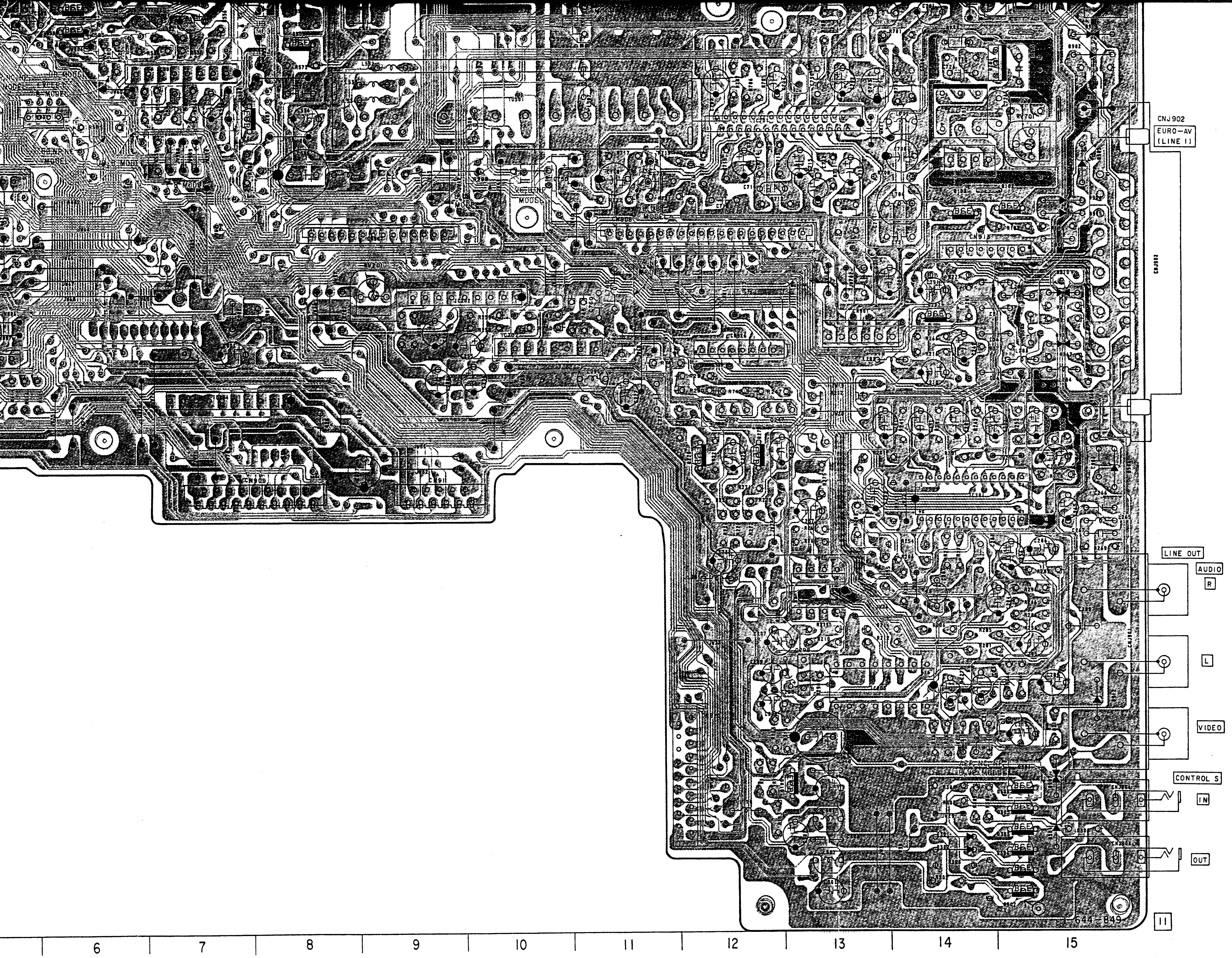
14

16


CNJ902
EURO-AV
(LINE 1)
LINE OUT
AUDIO
R
L
VIDEO
CONTROL S
IN
OUT
11
6
7
8
9
10
11
12
13
14
15

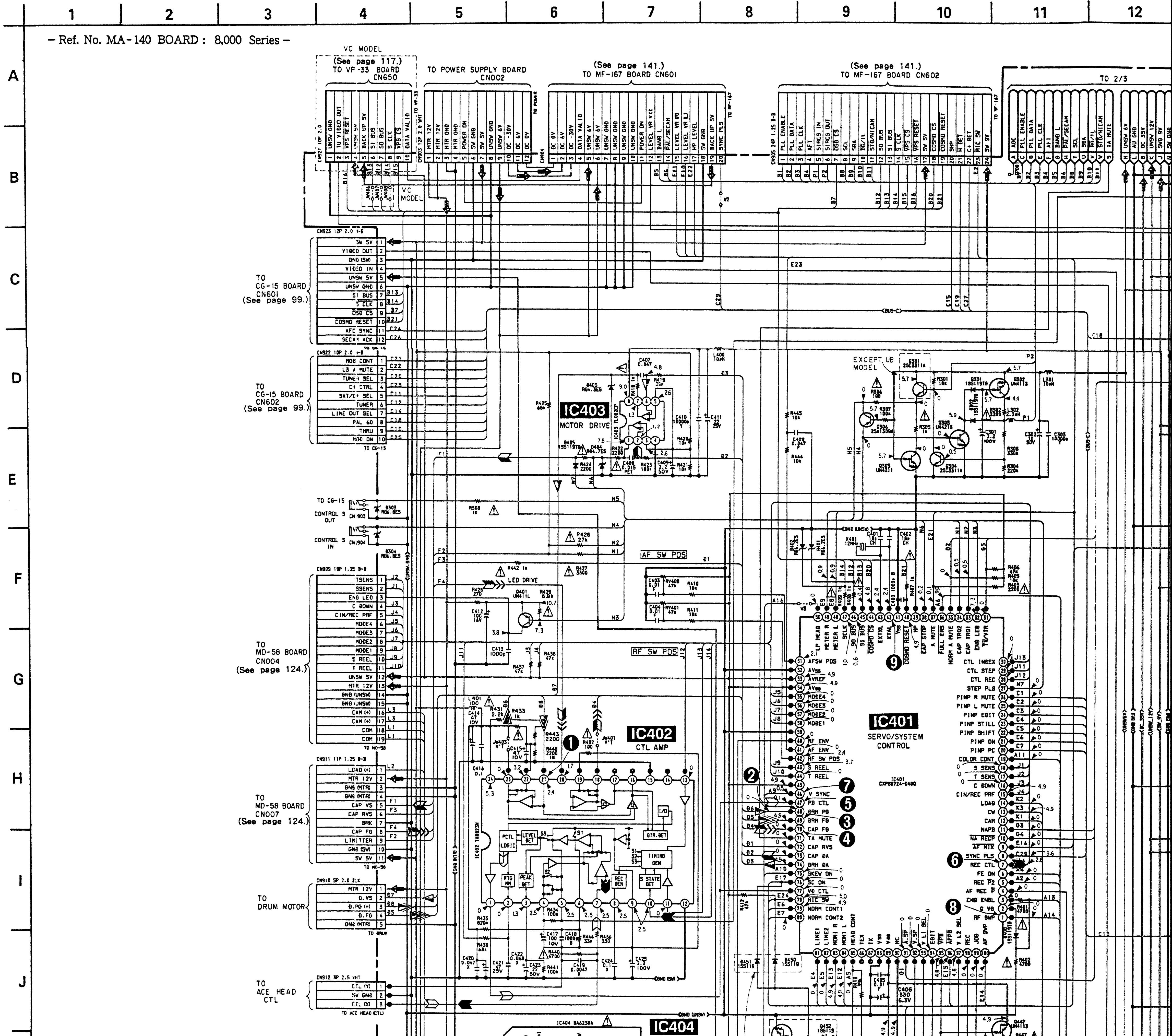
MA-140 BOARD

D301	K-14	Q101	B-14
D302	K-14	Q102	E-15
D304	K-15	Q103	E-14
D400	D-4	Q104	B-14
D401	C-3	Q105	A-14
D402	C-3	Q109	K-12
D403	E-1	Q202	F-14
D404	E-1	Q203	E-8
D405	F-2	Q220	H-12
D406	F-2	Q247	G-12
D450	D-3	Q270	H-12
D451	E-3	Q297	G-13
D452	E-4	Q301	K-15
D502	B-8	Q302	L-15
D505	A-5	Q303	K-15
D506	A-11	Q304	L-15
D901	B-14	Q305	K-15
D902	D-15	Q306	K-15
D903	E-15	Q401	G-3
D904	E-15	Q447	F-5
D905	F-15	Q450	E-3
D906	H-15	Q501	A-5
D907	K-15	Q502	A-8
D910	F-15	Q503	D-6
D911	G-15	Q504	D-6
D912	J-15	Q505	D-8
D913	D-15	Q507	C-8
		Q508	B-8
IC201	H-14	Q701	D-15
IC202	F-10		
IC203	J-13		
IC204	I-13		
IC401	D-4		
IC402	B-2		
IC403	E-2		
IC404	G-7		
IC501	B-7		
IC502	D-7		
IC503	B-5		
IC701	E-12		
IC702	F-11		

IC

IC401 8-752-836-00 CXP80724-040Q

MA-140 (SERVO, SYSTEM CONTROL, MECHANISM DRIVE) SCHEMATIC DIAGRAM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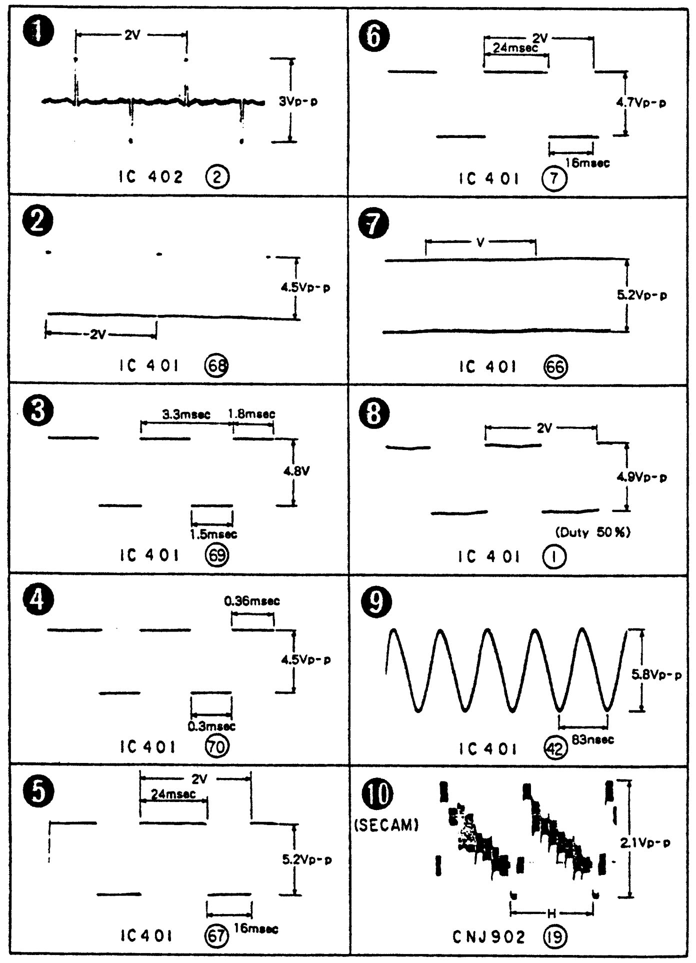
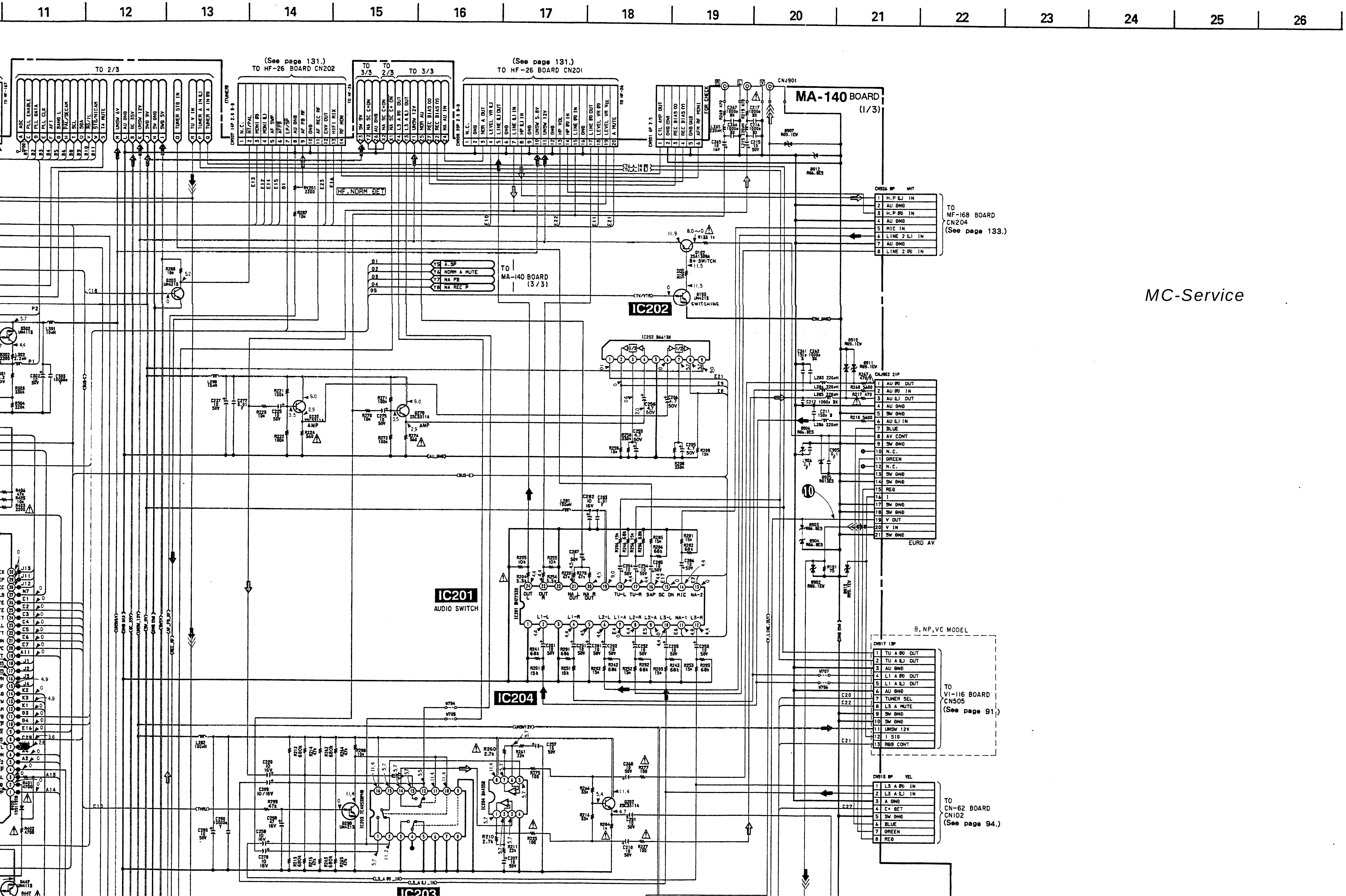
11
12
A
B
C
D
E
F
G
H
I
J
– Ref. No. MA-140 BOARD : 8,000 Series –
VC MODEL
(See page 117.) TO VF-33 BOARD CN650
TO POWER SUPPLY BOARD CN002
(See page 141.) TO MF-167 BOARD CN601
(See page 141.) TO MF-167 BOARD CN602
TO 2/3
TO CG-15 BOARD CN601 (See page 99.)
TO CG-15 BOARD CN602 (See page 99.)
TO CG-15 CONTROL S OUT
CONTROL S IN
TO MD-58 BOARD CN004 (See page 124.)
TO MD-58 BOARD CN007 (See page 124.)
TO DRUM MOTOR
TO ACE HEAD CTL
IC403 MOTOR DRIVE
IC402 CTL AMP
IC401 SERVO/SYSTEM CONTROL
IC404
EXCEPT UB MODEL
AF SW POS
RF SW POS
LED DRIVE

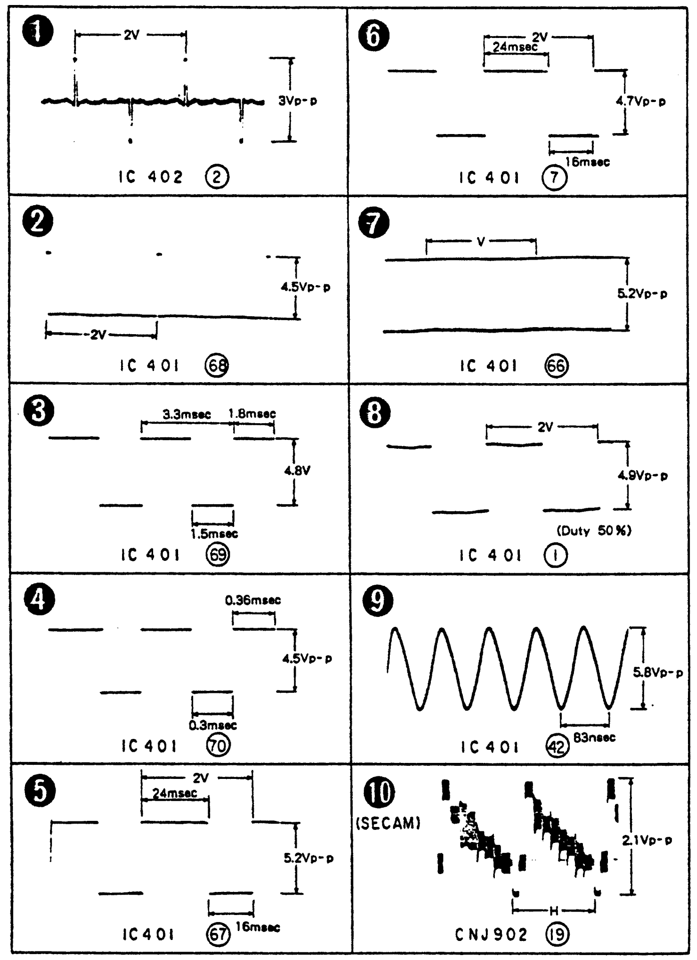
MA-140 BOARD (1/3)




11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
TO 2/3
(See page 131.)
TO HF-26 BOARD CN202
TO 3/3
TO 2/3
TO 3/3
(See page 131.)
TO HF-26 BOARD CN201
CNJ901
MA-140 BOARD
(1/3)
HF.NORM DET
TO MF-168 BOARD CN204
(See page 133.)
H.P (L) IN
AU GND
H.P (R) IN
AU GND
MIC IN
LINE 2 (L) IN
AU GND
LINE 2 (R) IN
Q102 8+ SWITCH
Q103 SWITCHING
TO MA-140 BOARD (3/3)
A.SP
NORM A MUTE
NA PB
NA REC P
IC202
IC202 BA6138
CNJ902 21P
AU (R) OUT
AU (R) IN
AU (L) OUT
AU GND
SW GND
AU (L) IN
BLUE
AV CONT
SW GND
N.C.
GREEN
N.C.
SW GND
SW GND
RED
I
SW GND
SW GND
V OUT
V IN
SW GND
EURO AV
IC201
AUDIO SWITCH
IC201 BH7733S
AMP
B,NP,VC MODEL
CN917 13P
TU A (R) OUT
TU A (L) OUT
AU GND
L1 A (R) OUT
L1 A (L) OUT
AU GND
TUNER SEL
L3 A MUTE
SW GND
SW GND
UNSW 12V
I SIG
RGB CONT
TO VI-116 BOARD CN505
(See page 91.)
CN918 8P YEL
L3 A (R) IN
L3 A (L) IN
A GND
C+ DET
SW GND
BLUE
GREEN
RED
TO CN-62 BOARD CN102
(See page 94.)
IC204
IC203
IC204 BA4558
IC203 TC4053BP

MC-Service

MA-140 BOARD (1/3)

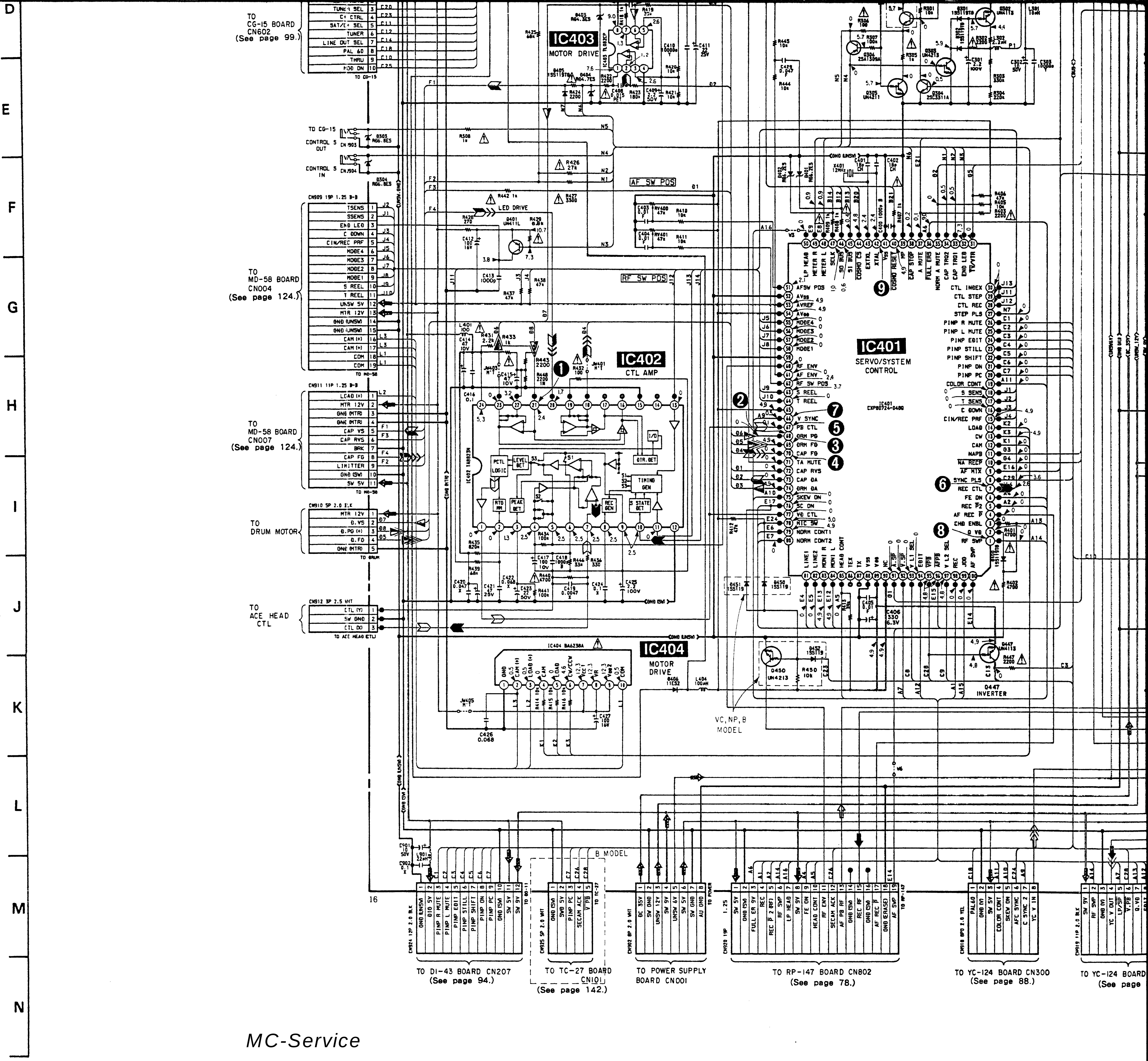


- **Signal palth**

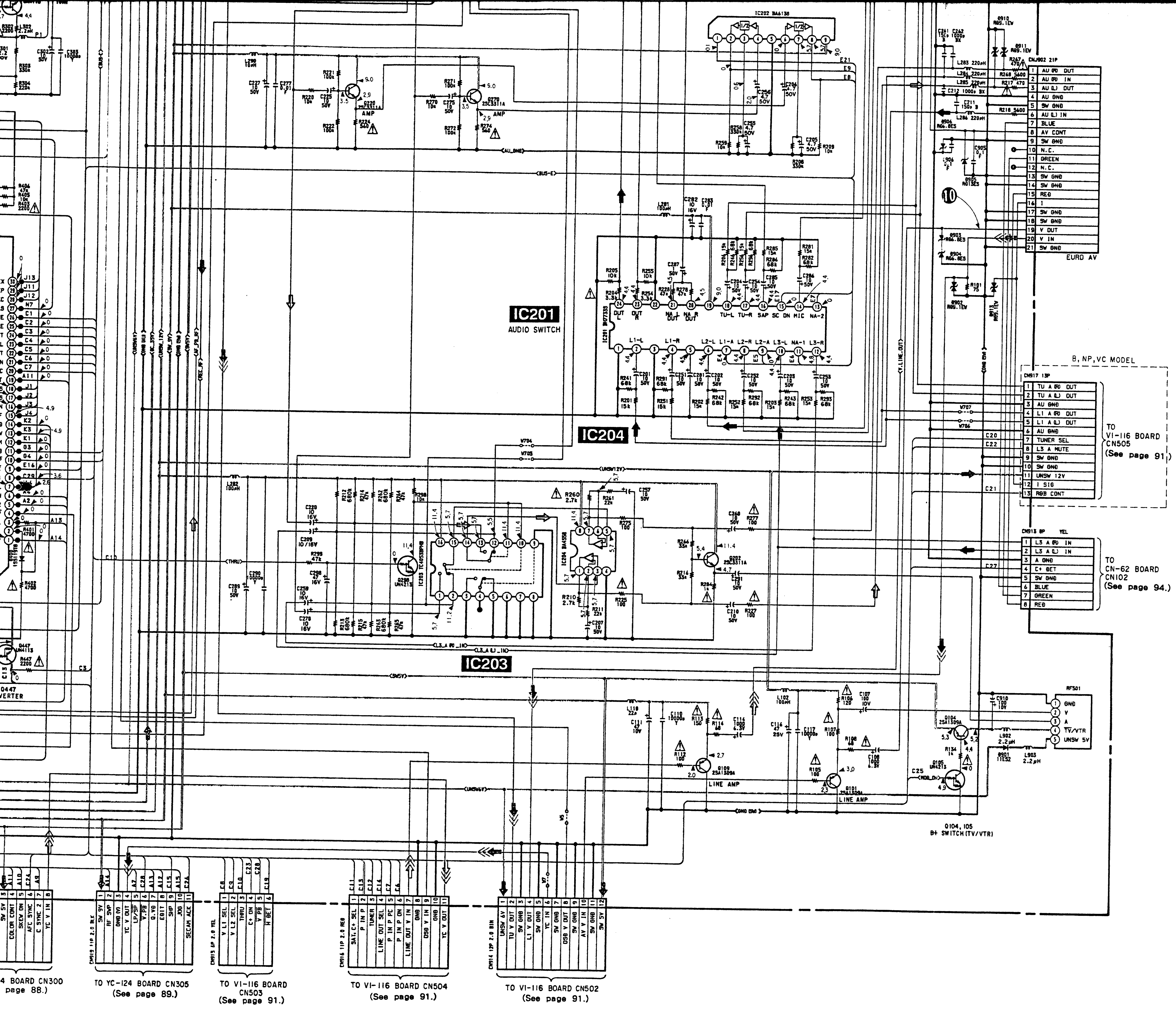
	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡»	➡
PB			⇨»	⇨

- **Signal palth**

	REC	REC/PB	PB
Drum speed servo		▷	
Drum phase servo		▷▷	
Drum servo (speed and phase)		▷▷▷	
Capstan speed servo		⊳	
Capstan servo (speed and phase)		⊳»	
Ref. signal	➤		▷

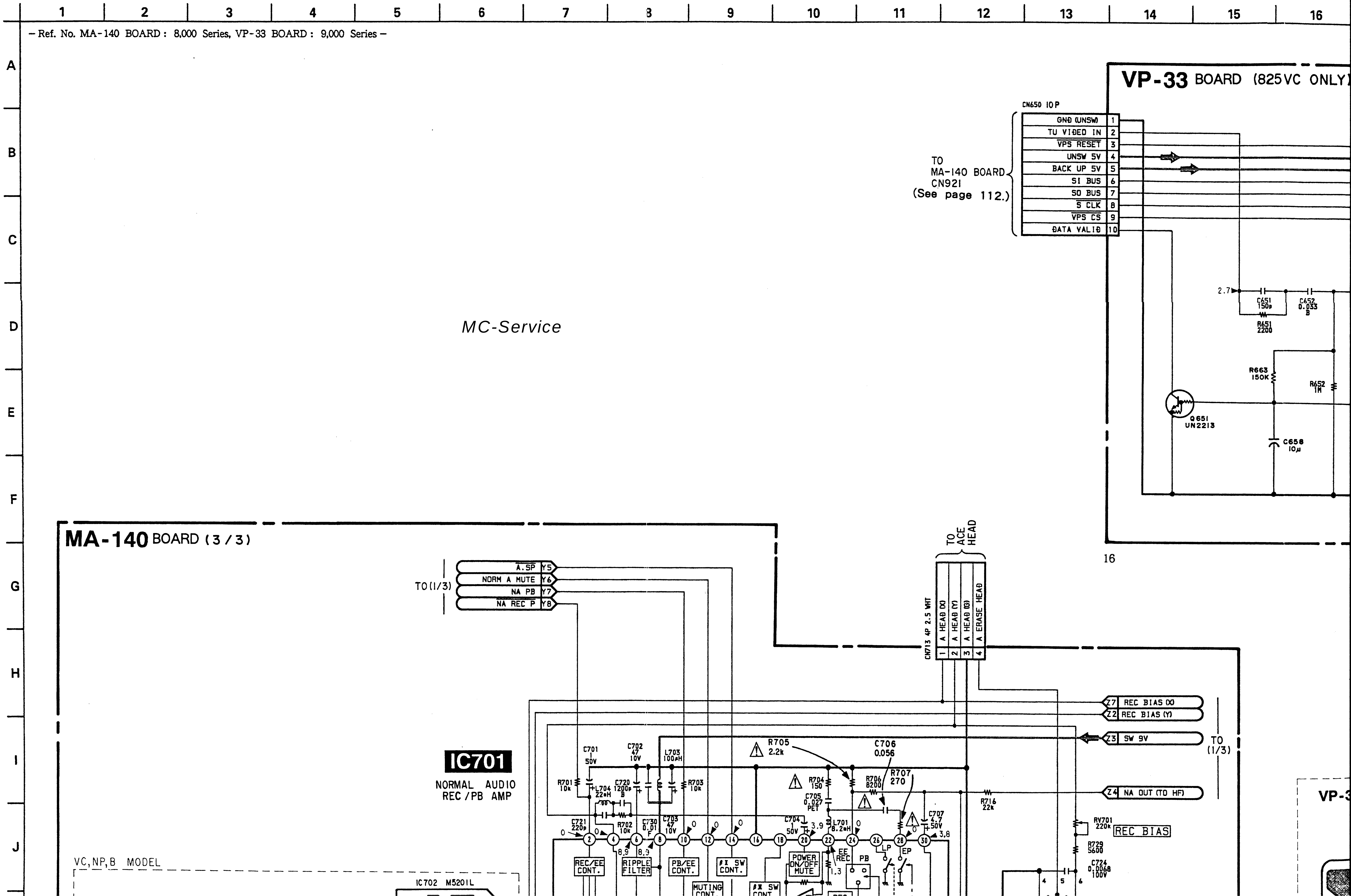

D
E
F
G
H
I
J
K
L
M
N
TO CG-15 BOARD CN602 (See page 99.)
TO CG-15 CONTROL S OUT
CONTROL S IN
TO MD-58 BOARD CN004 (See page 124.)
TO MD-58 BOARD CN007 (See page 124.)
TO DRUM MOTOR
TO ACE HEAD CTL
IC403 MOTOR DRIVE
IC402 CTL AMP
IC401 SERVO/SYSTEM CONTROL
IC404 MOTOR DRIVE
Q447 INVERTER
VC, NP, B MODEL
B MODEL
AF SW PDS
RF SW PDS
LED DRIVE
TO DI-43 BOARD CN207 (See page 94.)
TO TC-27 BOARD CN101 (See page 142.)
TO POWER SUPPLY BOARD CN001
TO RP-147 BOARD CN802 (See page 78.)
TO YC-124 BOARD CN300 (See page 88.)
TO YC-124 BOARD (See page

MC-Service


IC202 BA6138
IC201
AUDIO SWITCH
IC201 BH7733S
IC204
IC204 BA4558
IC203
IC203 TC4053BP
Q220 2SC3311A AMP
Q270 2SC3311A AMP
Q202 2SC3311A
Q298 UN4211
Q109 2SA1309A LINE AMP
Q101 2SA1309A LINE AMP
Q104, 105 B+ SWITCH (TV/VTR)
Q447 UN4113
CN1902 21P
1 AU (R) OUT
2 AU (R) IN
3 AU (L) OUT
4 AU GND
5 SW GND
6 AU (L) IN
7 BLUE
8 AV CONT
9 SW GND
10 N.C.
11 GREEN
12 N.C.
13 SW GND
14 SW GND
15 RED
16 I
17 SW GND
18 SW GND
19 V OUT
20 V IN
21 SW GND
EURO AV
B, NP, VC MODEL
CN917 13P
1 TU A (R) OUT
2 TU A (L) OUT
3 AU GND
4 L1 A (R) OUT
5 L1 A (L) OUT
6 AU GND
7 TUNER SEL
8 L3 A MUTE
9 SW GND
10 SW GND
11 UNSW 12V
12 I SIG
13 RGB CONT
TO VI-116 BOARD CN505 (See page 91.)
CN918 8P YEL
1 L3 A (R) IN
2 L3 A (L) IN
3 A GND
4 C+ SET
5 SW GND
6 BLUE
7 GREEN
8 RED
TO CN-62 BOARD CN102 (See page 94.)
RF501
1 GND
2 V
3 A
4 TV/VTR
5 UNSW 5V
4 BOARD CN300 page 88.)
TO YC-124 BOARD CN305 (See page 89.)
TO VI-116 BOARD CN503 (See page 91.)
TO VI-116 BOARD CN504 (See page 91.)
TO VI-116 BOARD CN502 (See page 91.)
(UNSW12V)
(UNSW6V)
(SW5V)
(AU_GND)
(BUS-E)
(THRU)
(L3_A (R)_IN)
(L3_A (L)_IN)
(GND (SW))
0447 INVERTER

MA-140 (NORMAL AUDIO REC/PB AMP), VP-33(SERVO/SYSTEM CONTROL MICROPROCESSOR) SCHEMATIC DIAGRAMS / PRINTED WIRING BOARD

– Ref. No. MA-140 BOARD : 8,000 Series, VP-33 BOARD : 9,000 Series –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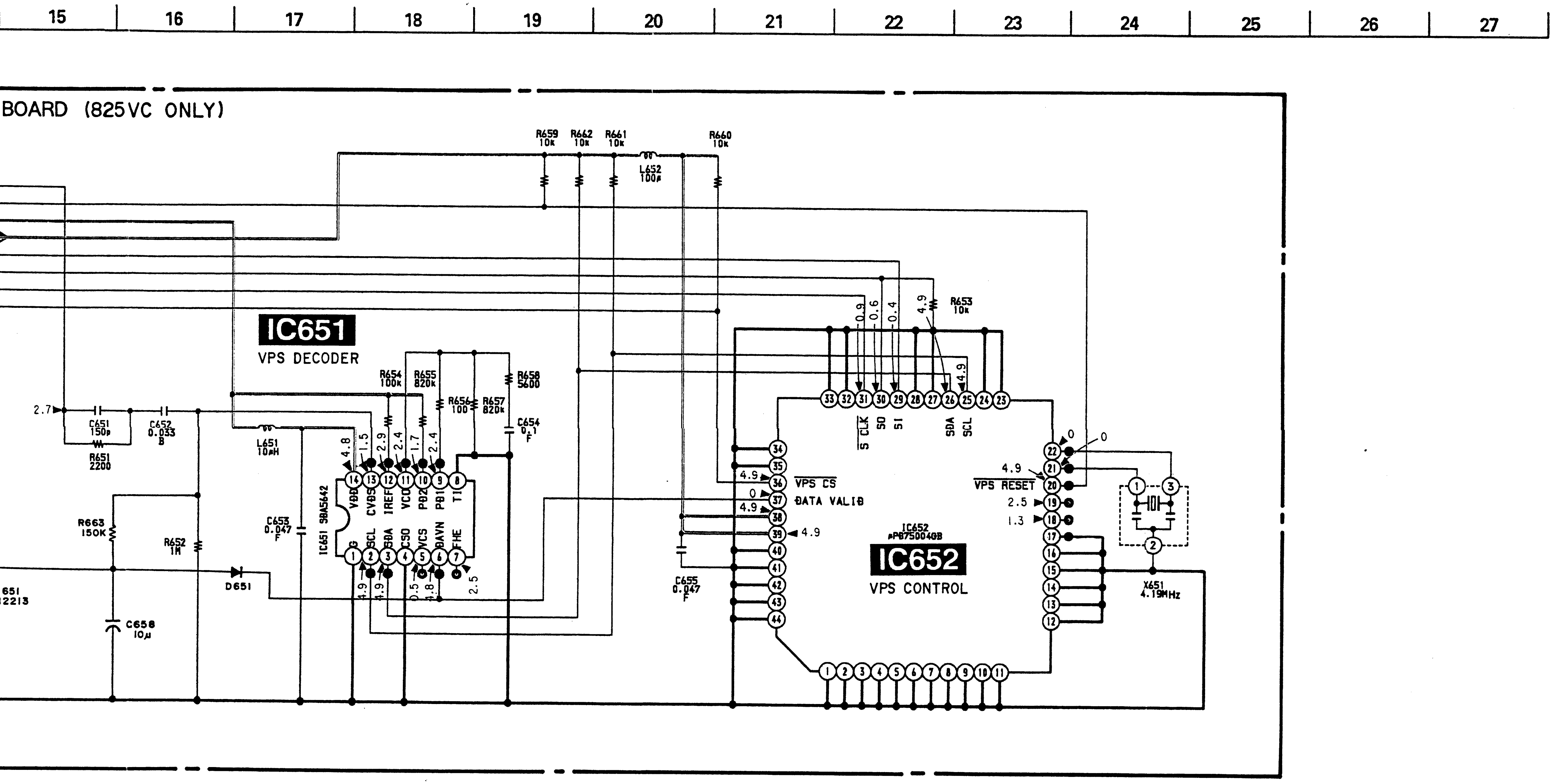
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
VP-33 BOARD (825VC ONLY)
CN650 10P
GND (UNSW)
TU VIDEO IN
VPS RESET
UNSW 5V
BACK UP 5V
SI BUS
SO BUS
S CLK
VPS CS
DATA VALID
TO MA-140 BOARD CN921 (See page 112.)
2.7
C651 150p
C652 0.033 B
R651 2200
R663 150K
R652 1M
Q651 UN2213
C658 10μ
16
MA-140 BOARD (3/3)
TO (1/3)
A.SP
NORM A MUTE
NA PB
NA REC P
Y5
Y6
Y7
Y8
TO ACE HEAD
CN713 4P 2.5 WHT
A HEAD (X)
A HEAD (Y)
A HEAD (G)
A ERASE HEAD
REC BIAS (X)
REC BIAS (Y)
SW 9V
NA OUT (TO HF)
Z7
Z2
Z3
Z4
TO (1/3)
IC701
NORMAL AUDIO REC/PB AMP
C701 1 50V
C702 47 10V
L703 100μH
R701 10k
L704 22mH
C720 1200p B
R703 10k
C721 220p
R702 10k
C730 0.01 F
C703 47 10V
R705 2.2k
C706 0.056
R704 150
R706 8200
R707 270
C705 0.027 PET
C704 1 50V
L701 8.2mH
C707 4.7 50V
R716 22k
RV701 220k
REC BIAS
R729 5600
C724 0.0068 100V
REC/EE CONT.
RIPPLE FILTER
PB/EE CONT.
ΦI SW CONT.
MUTING CONT.
ΦII SW CONT.
POWER ON/OFF MUTE
EE REC PB
LP EP
VC,NP,B MODEL
IC702 M5201L
VP-3


15
16
17
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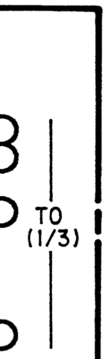
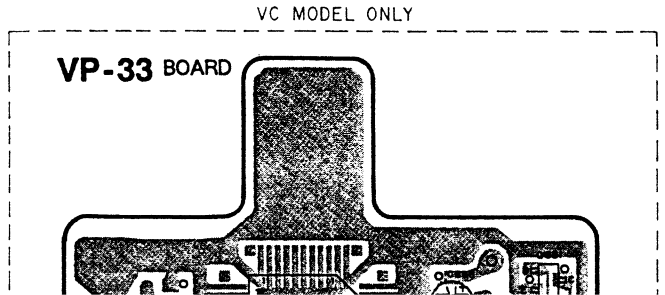
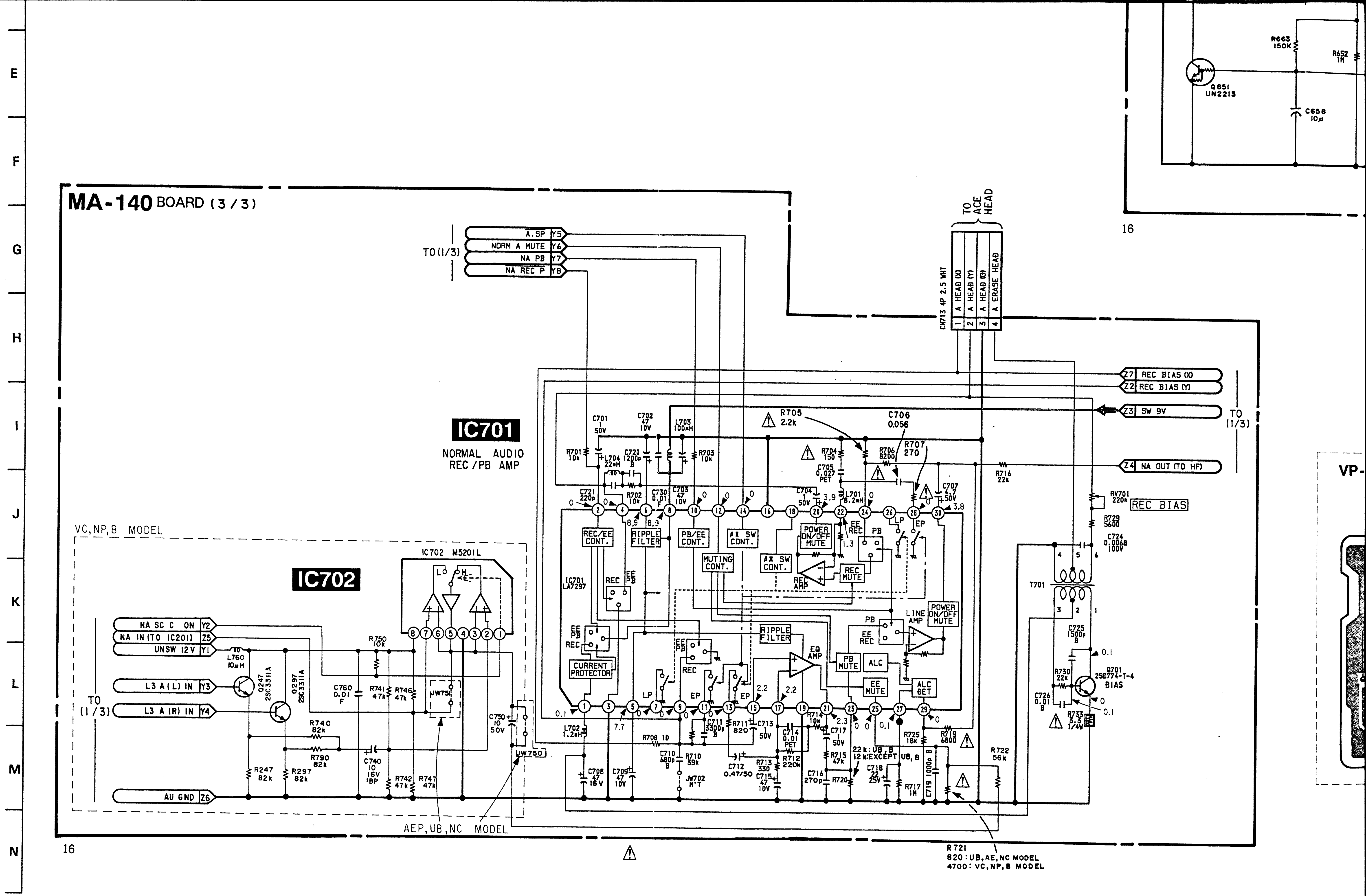
21
22
23
24
25
26
27
BOARD (825VC ONLY)
R659 10k
R662 10k
R661 10k
L652 100μ
R660 10k
R653 10k
IC651
VPS DECODER
R654 100k
R655 820k
R656 100
R657 820k
R658 5600
C654 0.1 F
C651 150p
C652 0.033 B
R651 2200
L651 10μH
C653 0.047 F
IC651 SBA5642
VBB
CVBS
IREF
VCO
PB2
PB1
TI
G
SCL
SDA
CSO
VCS
DAVN
FHE
R663 150K
R652 1M
D651
C658 10μ
C655 0.047 F
S CLK
SO
SI
SDA
SCL
VPS CS
DATA VALID
VPS RESET
IC652 μPD75004GB
IC652
VPS CONTROL
X651 4.19MHz
2.7
4.8
1.5
2.9
2.4
1.7
2.4
4.9
4.9
0.5
4.8
2.5
0.9
0.6
0.4
4.9
4.9
4.9
0
4.9
4.9
4.9
2.5
1.3
0
0

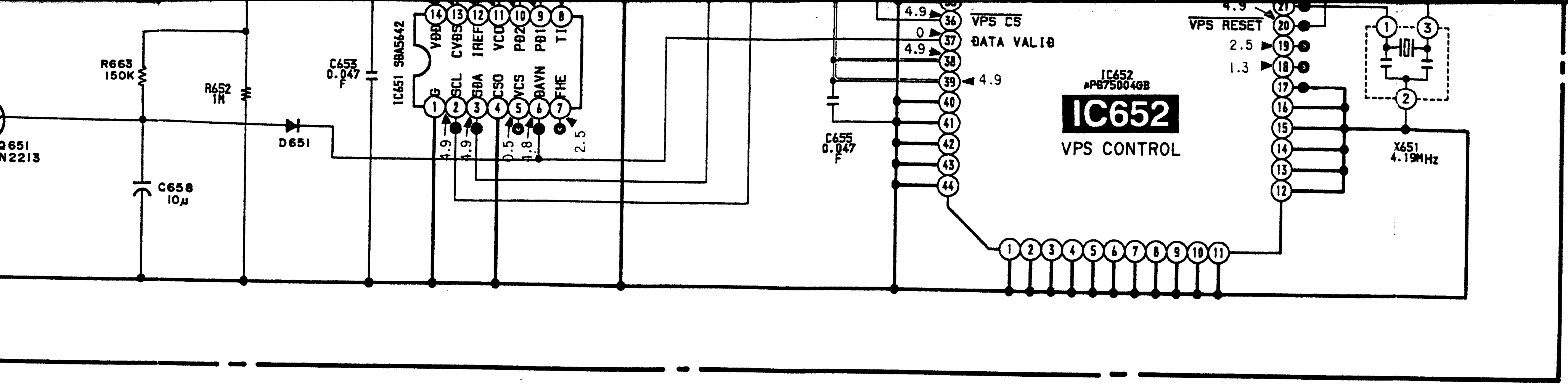


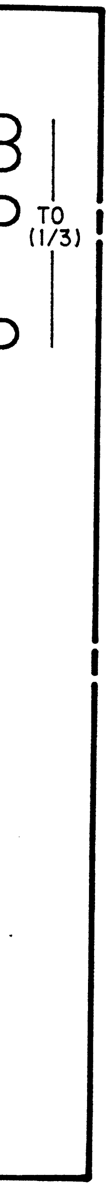

VC MODEL ONLY
VP-33 BOARD

VP-33 BOARD

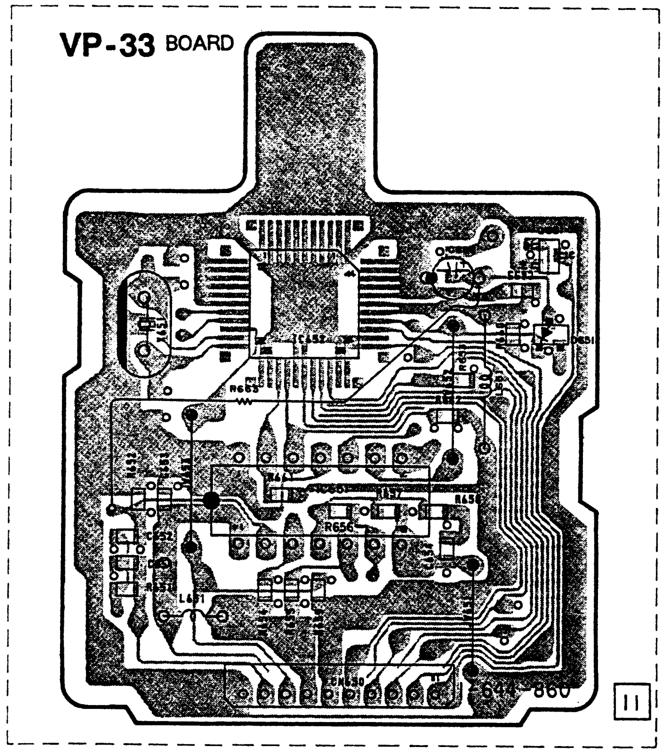
IC651	K-3
IC652	J-3

E
F
G
H
I
J
K
L
M
N
MA-140 BOARD (3/3)
TO (1/3)
A.SP Y5
NORM A MUTE Y6
NA PB Y7
NA REC P Y8
TO ACE HEAD
CN713 4P 2.5 WHT
1 A HEAD (X)
2 A HEAD (Y)
3 A HEAD (G)
4 A ERASE HEAD
Z7 REC BIAS (X)
Z2 REC BIAS (Y)
Z3 SW 9V
Z4 NA OUT (TO HF)
TO (1/3)
IC701
NORMAL AUDIO REC/PB AMP
IC701 LA7297
IC702
IC702 M5201L
VC,NP,B MODEL
AEP,UB,NC MODEL
NA SC C ON Y2
NA IN (TO IC201) Z5
UNSW 12V Y1
L3 A (L) IN Y3
L3 A (R) IN Y4
AU GND Z6
TO (1/3)
L760 10μH
Q247 2SC3311A
Q297 2SC3311A
R750 10k
C760 0.01 F
R741 47k
R746 47k
JW751
R740 82k
R790 82k
C740 10 16V BP
R742 47k
R747 47k
R247 82k
R297 82k
C750 10 50V
JW750
C701 1 50V
C702 47 10V
L703 100μH
R701 10k
L704 22μH
C720 1200p B
R703 10k
C721 220p
R702 10k
C730 0.01 F
C703 47 10V
R705 2.2k
C706 0.056
R704 150
C705 0.027 PET
R706 8200
R707 270
C704 1 50V
L701 8.2mH
C707 4.7 50V
R716 22k
RV701 220k REC BIAS
R729 5600
C724 0.0068 100V
T701
C725 1500p B
Q701 2SB774-T-4 BIAS
R730 22k
C726 0.01 B
R733 3.3 1/4W
REC/EE CONT.
RIPPLE FILTER
PB/EE CONT.
ϕX SW CONT.
MUTING CONT.
ϕX SW CONT.
POWER ON/OFF MUTE
REC AMP
REC MUTE
EE REC
PB
LP
EP
REC
PB
EE PB REC
CURRENT PROTECTOR
RIPPLE FILTER
EQ AMP
PB MUTE
ALC
EE MUTE
ALC DET
LINE AMP
POWER ON/OFF MUTE
L702 1.2mH
C708 47 16V
C709 47 10V
R708 10
C710 680p B
R710 39k
JW702 M'T
C711 3300p B
R711 820
C712 0.47/50
C713 1 50V
R713 330
C715 47 10V
C714 0.01 PET
R712 220k
C716 270p
R714 10k
C717 1 50V
R715 47k
R720
22k: UB, B
12k: EXCEPT UB, B
C718 22 25V
R717 1M
C719 1000p B
R725 18k
R719 6800
R722 56k
R721
820: UB, AE, NC MODEL
4700: VC, NP, B MODEL
Q651 UN2213
R663 150K
R652 1M
C658 10μ
16
16
VP-


R663
150K
R652
1M
D651
Q651
N2213
C658
10μ
C653
0.047
F
IC651 SDA5642
VDD
CVBS
IREF
VCO
PD2
PD1
TI
G
SCL
SDA
C50
VCS
SAVN
FHE
4.9
4.9
0.5
4.8
2.5
VPS CS
DATA VALID
4.9
0
4.9
4.9
C655
0.047
F
IC652
μPD75004GB
IC652
VPS CONTROL
VPS RESET
2.5
1.3
X651
4.19MHz



VC MODEL ONLY


VP-33 BOARD
IC652
R663
R656
R658
D651
L651
R659
11

VP-33 BOARD

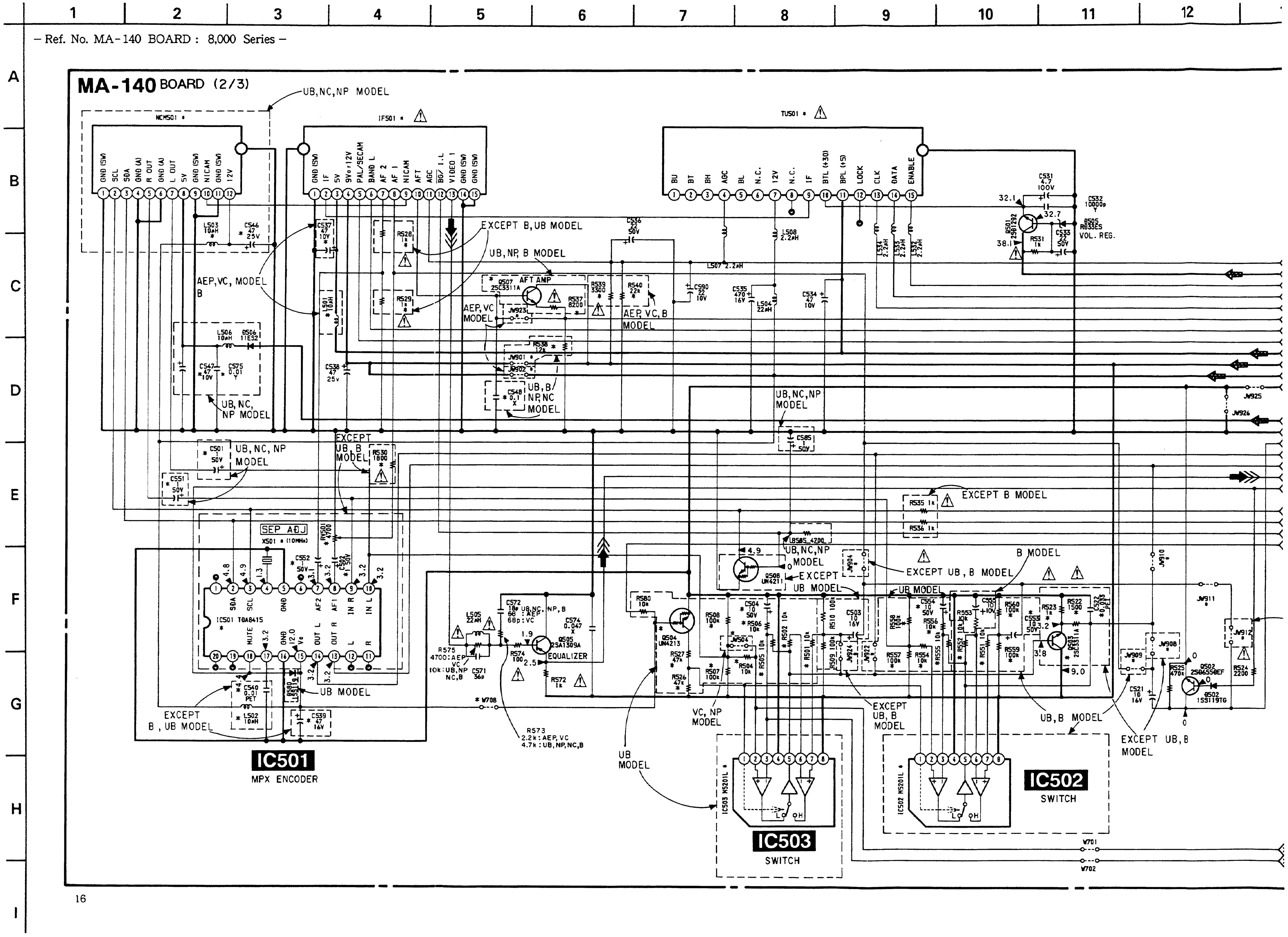
IC651	K-3
IC652	J-3

IC

IC652 8-759-147-30 uPD75004GB-VSX182 (VC)

MA-140 (TUNER, IF STAGE AMP) SCHEMATIC DIAGRAM

– Ref. No. MA-140 BOARD : 8,000 Series –



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A
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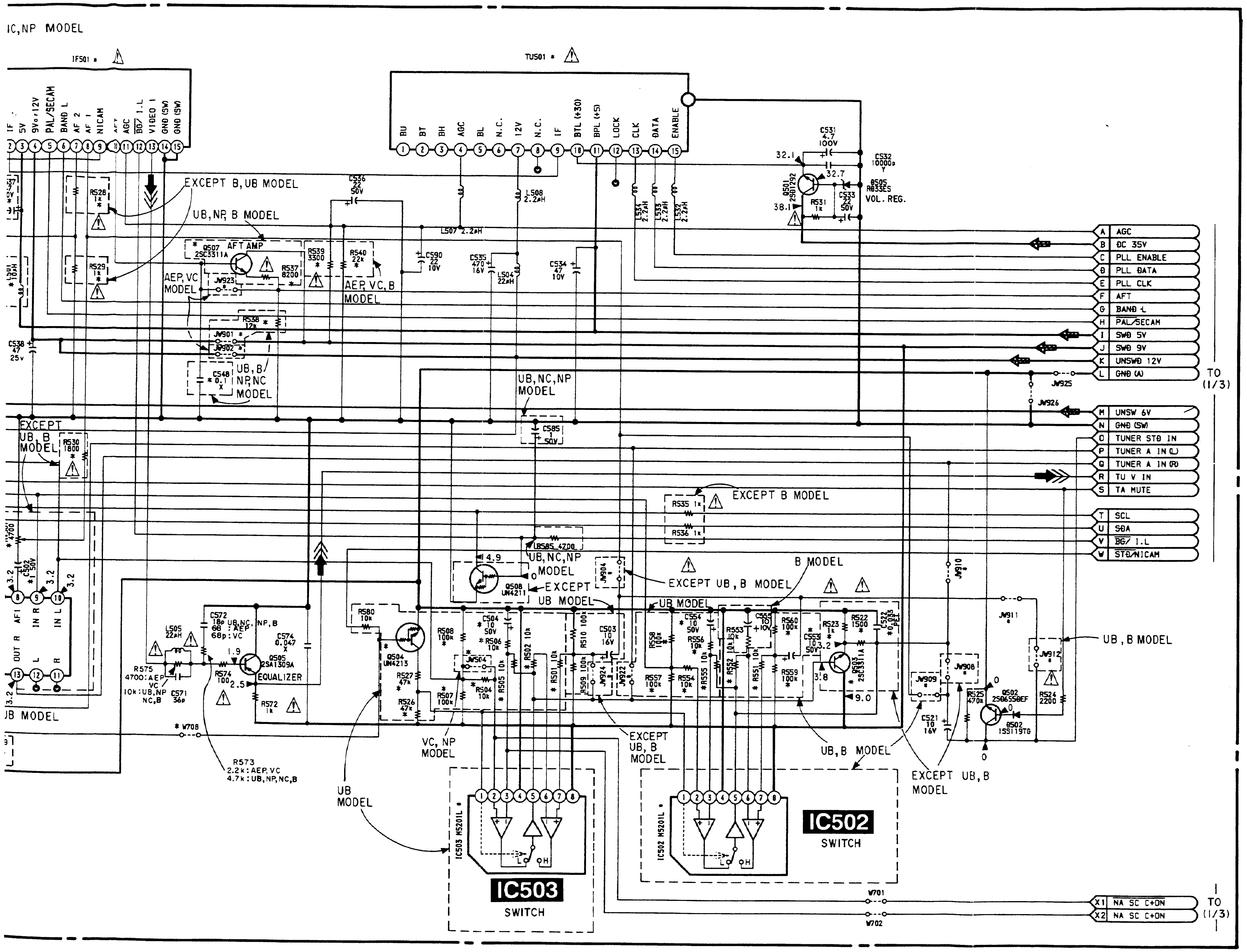
F
G
H
I
MA-140 BOARD (2/3)
UB,NC,NP MODEL
NCMS01
IFS01
TUS01
GND (SW)
SCL
SDA
GND (A)
R OUT
GND (A)
L OUT
5V
GND (SW)
NICAM
12V
IF
9V or 12V
PAL/SECAM
BAND L
AF 2
AF 1
AFT
AGC
BG/ I.L
VIDEO 1
BU
BT
BH
BL
N.C.
BTL (+30)
BPL (+5)
LOCK
CLK
DATA
ENABLE
EXCEPT B,UB MODEL
UB,NP, B MODEL
AEP,VC, MODEL B
AFT AMP
Q507 2SC3311A
AEP,VC MODEL
AEP, VC, B MODEL
UB,B/ NP,NC MODEL
UB, NC, NP MODEL
EXCEPT UB, B MODEL
SEP ADJ
X501 (10MHz)
RV501 4700
IC501 TDA8415
SDA
SCL
GND
AF2
AF1
IN R
IN L
MUTE
OUT L
OUT R
L
R
UB MODEL
EXCEPT B , UB MODEL
IC501
MPX ENCODER
Q505 2SA1309A
EQUALIZER
R573 2.2k : AEP, VC 4.7k : UB, NP, NC, B
R575 4700 : AEP, VC 10k : UB, NP NC, B
UB MODEL
VC, NP MODEL
EXCEPT UB, B MODEL
UB, B MODEL
EXCEPT UB, B MODEL
B MODEL
EXCEPT B MODEL
EXCEPT UB , B MODEL
Q506 UN4211
Q504 UN4213
Q503 2SC3311A
Q501 2SD1292
R505 RD33ES VOL. REG.
Q502 2SB6S58EF
D502 1SS119TG
IC503 M5201L
IC503
SWITCH
IC502 M5201L
IC502
SWITCH
JW925
JW926
JW911
JW912
W701
W702
W708
16

AGRAM

4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19

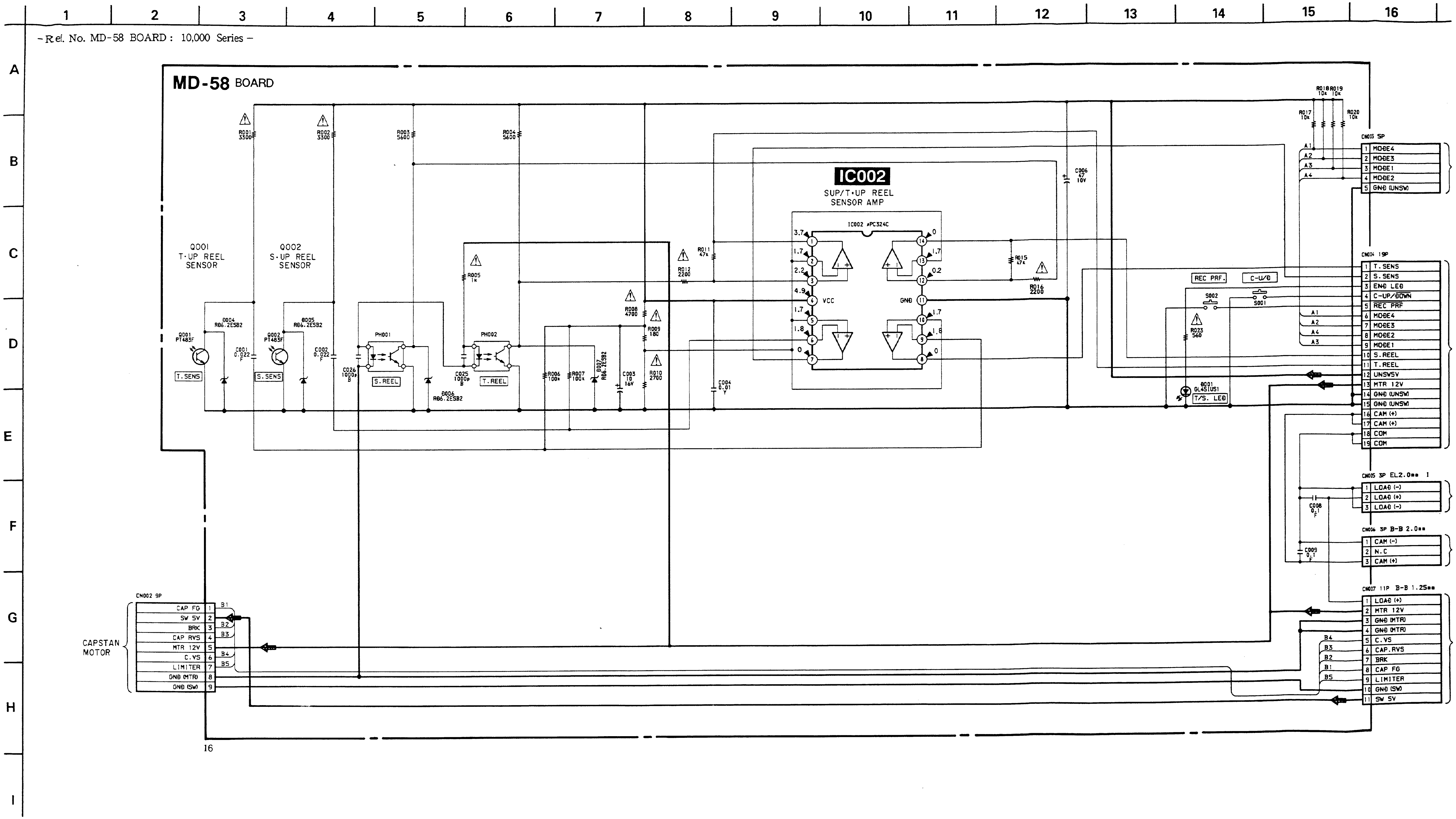

IC,NP MODEL
IF501
TU501
IF
5V
9V or 12V
PAL/SECAM
BAND L
AF 2
AF 1
NICAM
AFT
AGC
BG/I.L
VIDEO 1
GND (SW)
GND (SW)
BU
BT
BH
AGC
BL
N.C.
12V
N.C.
IF
BTL (+30)
BPL (+5)
LOCK
CLK
DATA
ENABLE
EXCEPT B,UB MODEL
UB,NP,B MODEL
Q507 AFT AMP
2SC3311A
AEP,VC MODEL
AEP,VC,B MODEL
UB,B/NP,NC MODEL
UB,NC,NP MODEL
EXCEPT UB,B MODEL
Q501 2SB1292
D505 RD33ES VOL. REG.
AGC
DC 35V
PLL ENABLE
PLL DATA
PLL CLK
AFT
BAND L
PAL/SECAM
SWD 5V
SWD 9V
UNSWD 12V
GND (A)
UNSW 6V
GND (SW)
TUNER STD IN
TUNER A IN (L)
TUNER A IN (R)
TU V IN
TA MUTE
SCL
SDA
BG/I.L
STD/NICAM
TO (1/3)
EXCEPT B MODEL
B MODEL
EXCEPT UB,B MODEL
UB MODEL
Q508 UN4211
Q504 UN4213
Q505 2SA1309A
EQUALIZER
Q503 2SC3311A
Q502 2SD655BEF
D502 1SS119TG
UB,B MODEL
VC,NP MODEL
EXCEPT UB,B MODEL
UB,B MODEL
EXCEPT UB,B MODEL
UB MODEL
R575 4700:AEP,VC 10k:UB,NP NC,B
R573 2.2k:AEP,VC 4.7k:UB,NP,NC,B
IC503 M5201L
IC503
SWITCH
IC502 M5201L
IC502
SWITCH
NA SC C+ON
NA SC C+ON
TO (1/3)
UB MODEL

- **Signal palth**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			➡»	
PB				

MD-58 (MECHANISM SENSOR) SCHEMATIC DIAGRAM

– Ref. No. MD-58 BOARD : 10,000 Series –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14
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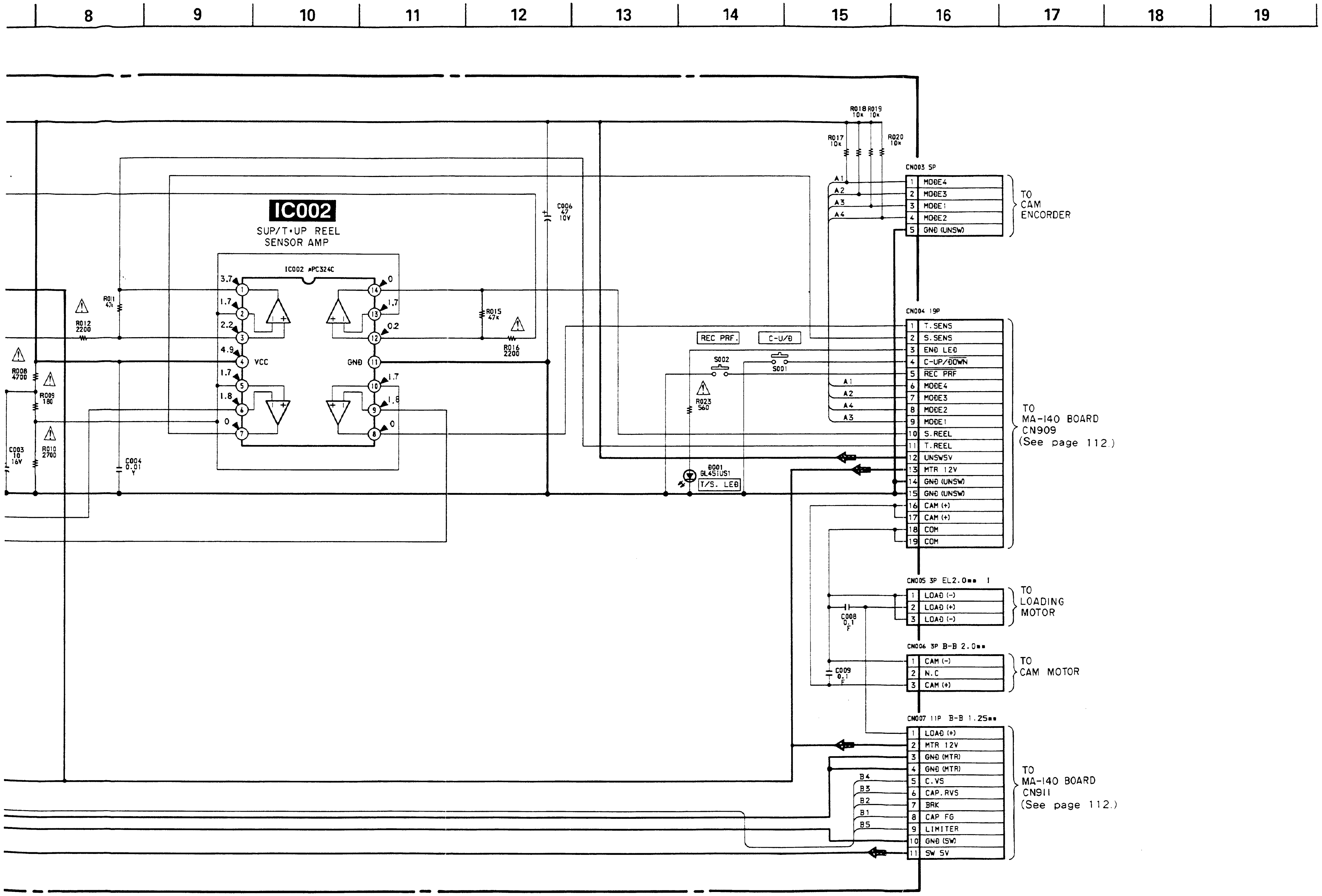
16
A
B
C
D
E
F
G
H
I
MD-58 BOARD
R001 3300
R002 3300
R003 5600
R004 5600
Q001 T·UP REEL SENSOR
Q002 S·UP REEL SENSOR
Q001 PT483F
Q002 PT483F
D004 RD6.2ESB2
D005 RD6.2ESB2
D006 RD6.2ESB2
D007 RD6.2ESB2
C001 0.022 F
C002 0.022 F
T.SENS
S.SENS
PH001
PH002
C026 1000p B
C025 1000p B
S.REEL
T.REEL
R005 1k
R006 100k
R007 100k
C003 10 16V
R008 4700
R009 180
R010 2700
R011 47k
R012 2200
C004 0.01 Y
IC002
SUP/T·UP REEL SENSOR AMP
IC002 μPC324C
3.7
1.7
2.2
4.9
1.7
1.8
0
VCC
GND
0
1.7
0.2
1.7
1.8
0
R015 47k
R016 2200
C006 47 10V
REC PRF.
C-U/D
S002
S001
R023 560
D001 GL451US1
T/S. LED
R017 10k
R018 10k
R019 10k
R020 10k
A1
A2
A3
A4
CN003 5P
1 MODE4
2 MODE3
3 MODE1
4 MODE2
5 GND (UNSW)
CN004 19P
1 T.SENS
2 S.SENS
3 END LED
4 C-UP/DOWN
5 REC PRF
6 MODE4
7 MODE3
8 MODE2
9 MODE1
10 S.REEL
11 T.REEL
12 UNSW5V
13 MTR 12V
14 GND (UNSW)
15 GND (UNSW)
16 CAM (+)
17 CAM (+)
18 COM
19 COM
CN005 3P EL2.0mm I
1 LOAD (–)
2 LOAD (+)
3 LOAD (–)
C008 0.1 F
CN006 3P B-B 2.0mm
1 CAM (–)
2 N.C
3 CAM (+)
C009 0.1 F
CN007 11P B-B 1.25mm
1 LOAD (+)
2 MTR 12V
3 GND (MTR)
4 GND (MTR)
5 C.VS
6 CAP.RVS
7 BRK
8 CAP FG
9 LIMITER
10 GND (SW)
11 SW 5V
B1
B2
B3
B4
B5
CN002 9P
CAPSTAN MOTOR
CAP FG 1
SW 5V 2
BRK 3
CAP RVS 4
MTR 12V 5
C.VS 6
LIMITER 7
GND (MTR) 8
GND (SW) 9
16


8
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17
18
19
IC002
SUP/T·UP REEL
SENSOR AMP
IC002 μPC324C
VCC
GND
R011 47k
R012 2200
R008 4700
R009 180
R010 2700
C003 10 16V
C004 0.01 Y
C006 47 10V
R015 47k
R016 2200
R017 10k
R018 10k
R019 10k
R020 10k
A1
A2
A3
A4
B1
B2
B3
B4
B5
REC PRF.
C-U/D
S002
S001
R023 560
D001 GL451US1
T/S. LED
C008 0.1 F
C009 0.1 F
CN003 5P
1 MODE4
2 MODE3
3 MODE1
4 MODE2
5 GND (UNSW)
TO CAM ENCORDER
CN004 19P
1 T.SENS
2 S.SENS
3 END LED
4 C-UP/DOWN
5 REC PRF
6 MODE4
7 MODE3
8 MODE2
9 MODE1
10 S.REEL
11 T.REEL
12 UNSW5V
13 MTR 12V
14 GND (UNSW)
15 GND (UNSW)
16 CAM (+)
17 CAM (+)
18 COM
19 COM
TO MA-140 BOARD CN909 (See page 112.)
CN005 3P EL2.0mm 1
1 LOAD (-)
2 LOAD (+)
3 LOAD (-)
TO LOADING MOTOR
CN006 3P B-B 2.0mm
1 CAM (-)
2 N.C
3 CAM (+)
TO CAM MOTOR
CN007 11P B-B 1.25mm
1 LOAD (+)
2 MTR 12V
3 GND (MTR)
4 GND (MTR)
5 C.VS
6 CAP.RVS
7 BRK
8 CAP FG
9 LIMITER
10 GND (SW)
11 SW 5V
TO MA-140 BOARD CN911 (See page 112.)

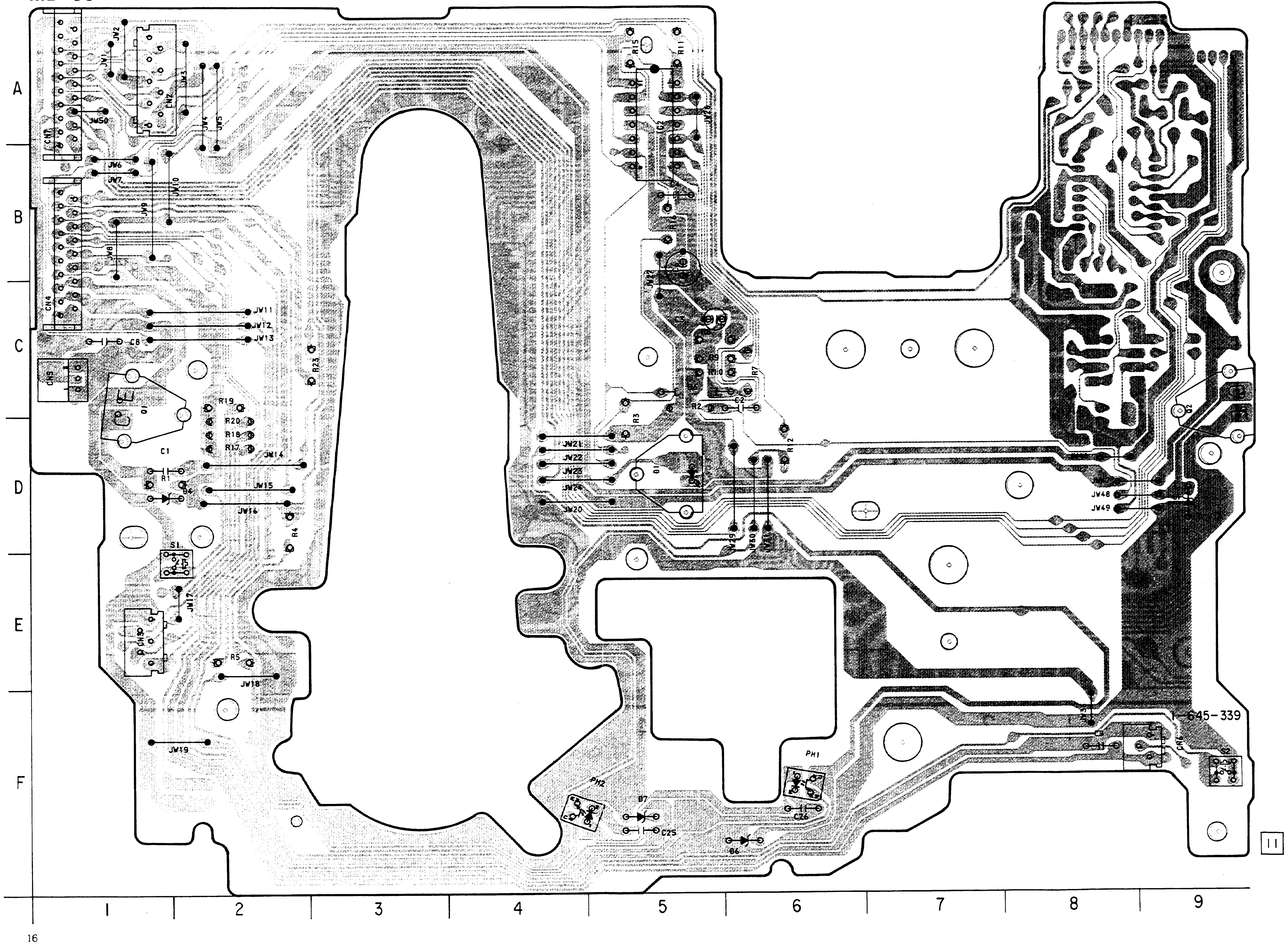
MD-58 (MECHANISM SENSOR) PRINTED WIRING BOARD

– Ref. No. MD-58 BOARD : 10,000 Series –

MD-58 BOARD

D001	D-5
D004	D-2
D005	D-9
D006	F-6
D007	F-5
IC002	A-5
PH001	F-6
PH002	F-5
Q001	C-1
Q002	C-9

MD-58 BOARD



A
B
C
D
E
F
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6
7
8
9
16
CN7
CN4
CN9
CN10
JW1
JW2
JW3
JW4
JW5
JW6
JW7
JW8
JW9
JW10
JW11
JW12
JW13
JW14
JW15
JW16
JW17
JW18
JW19
JW20
JW21
JW22
JW23
JW24
JW48
JW49
JW50
C1
C8
C25
C26
R1
R2
R3
R4
R5
R7
R10
R11
R12
R15
R17
R18
R19
R20
R23
Q1
Q2
D1
D4
D6
D7
S1
PH1
PH2
IC2
1-645-339
11

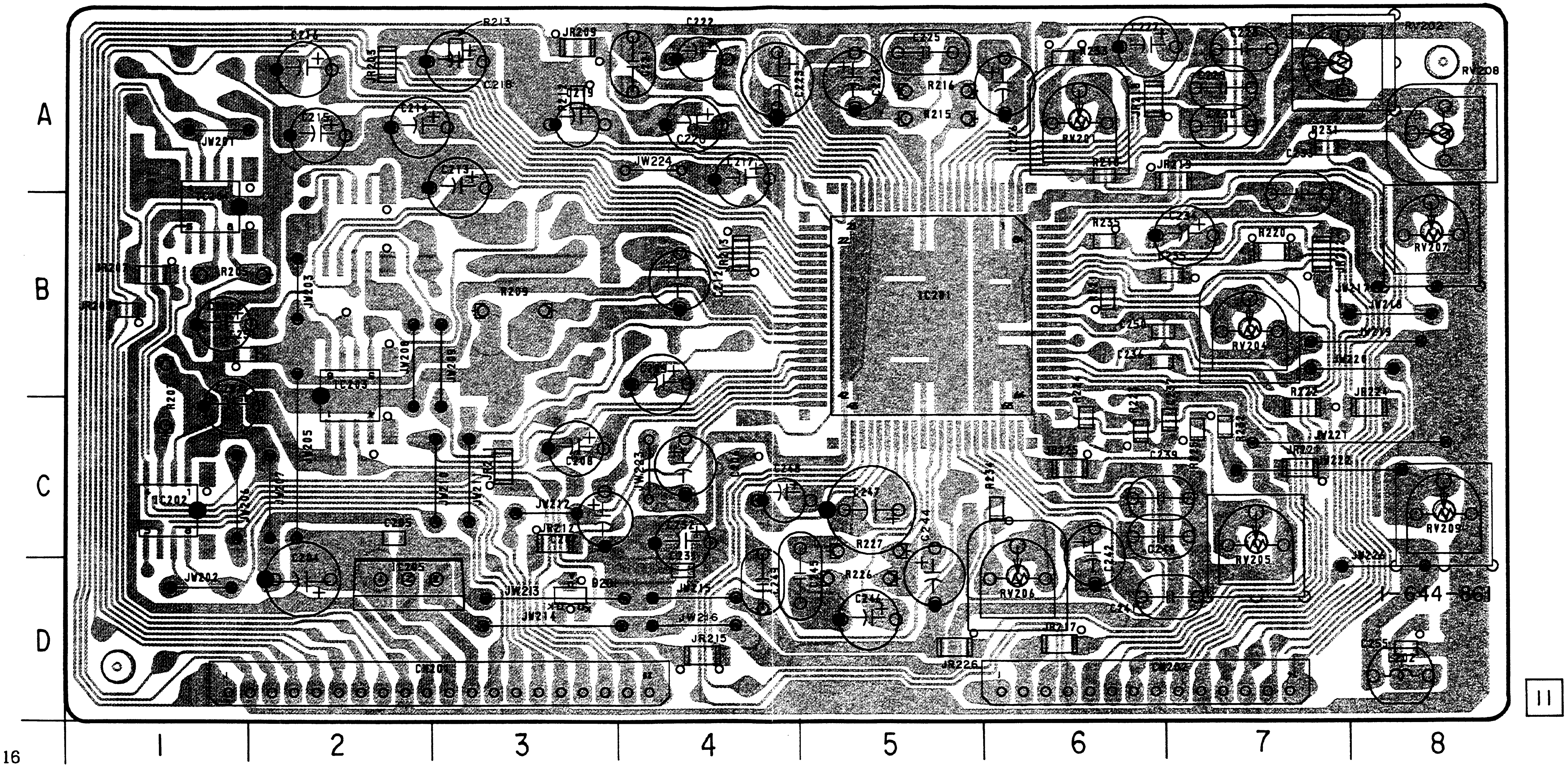
HF-26 (HI-Fi AUDIO) PRINTED WIRING BOARD

– Ref. No. HF-26 BOARD : 17,000 Series –

HF-26 BOARD

D201	D-3
IC201	B-5
IC202	C-1
IC203	B-2
IC204	B-1
IC205	D-2

HF-26 BOARD


A
B
C
D
1
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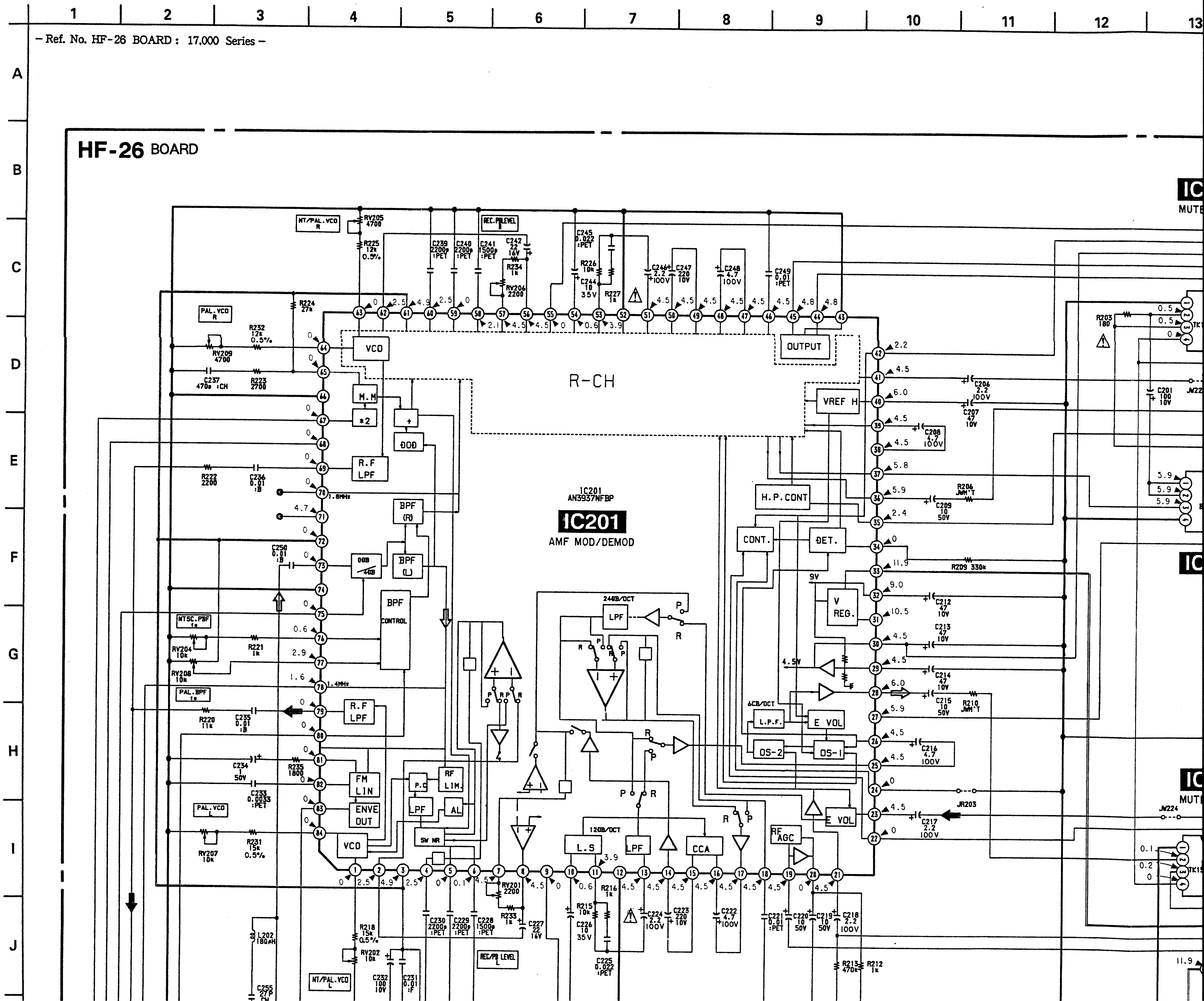
3
4
5
6
7
8
16
11
IC201
IC202
IC203
IC205
RV201
RV202
RV204
RV205
RV206
RV207
RV208
RV209
C222
C225
C213
C214
C215
C216
C218
C227
C229
C233
C234
C235
C236
C239
C241
C243
C244
C245
C246
C247
C248
CN201
CN202
R209
R213
R214
R215
R216
R220
R226
R227
JW201
JW202
JW213
JW214
JW224
JW216
JR215
JR226
JR217
D201

DIODE		
D201	8-719-104-34	1S2836

IC		
IC201	8-759-057-63	AN3937NFBP
IC202	8-759-946-44	TK15120M
IC203	8-759-924-46	BA4560F
IC204	8-759-946-44	TK15120M

HF-26 (HI-FI AUDIO) SCHEMATIC DIAGRAM


– Ref. No. HF-26 BOARD : 17,000 Series –

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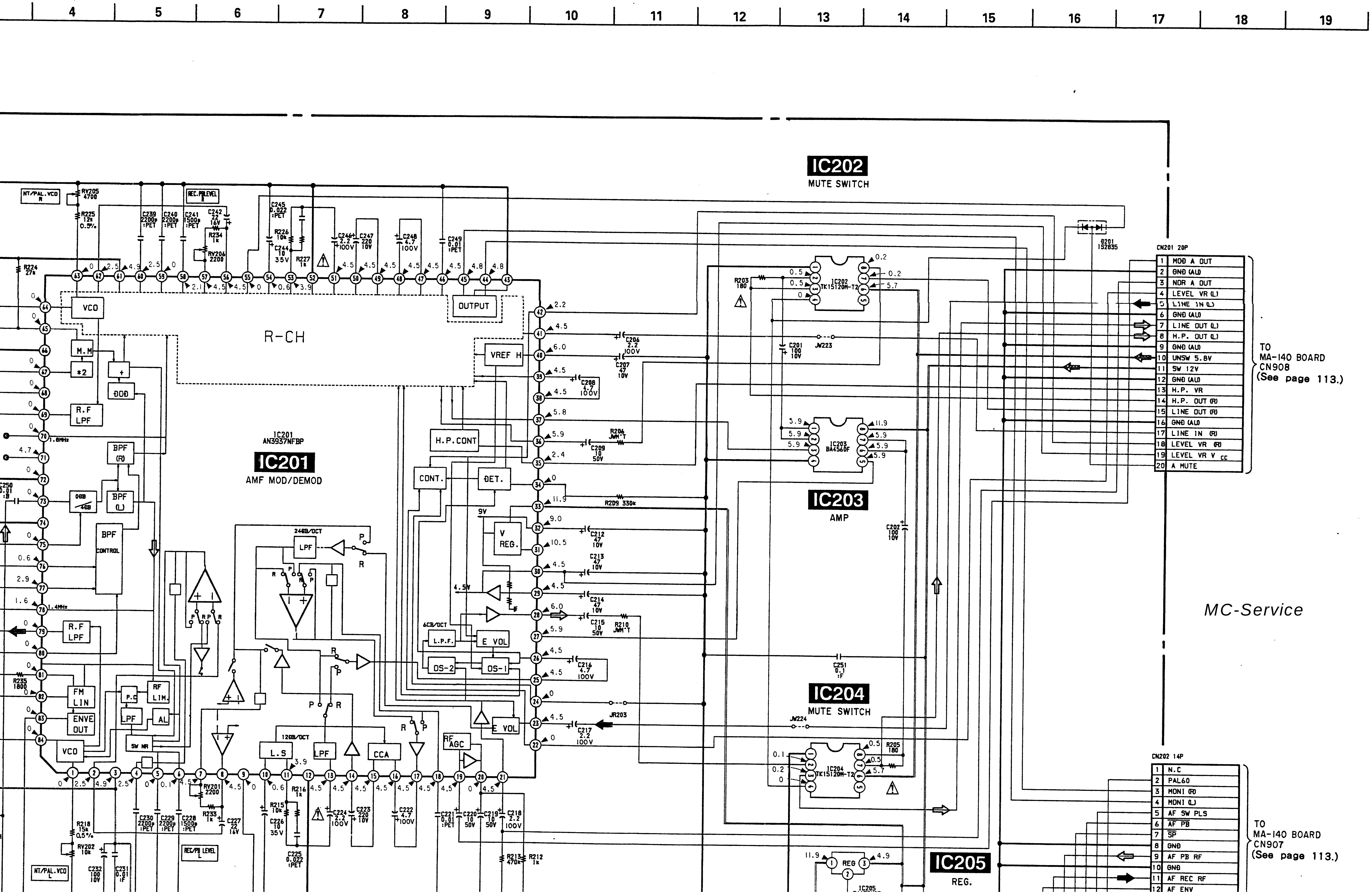
A
B
C
D
E
F
G
H
I
J
HF-26 BOARD
IC201
AN3937NFBP
IC201
AMF MOD/DEMOD
R-CH
VCO
OUTPUT
VREF
H.P.CONT
CONT.
DET.
V REG.
9V
E VOL
OS-1
OS-2
L.P.F.
6dB/OCT
RF AGC
CCA
LPF
L.S
12dB/OCT
24dB/OCT
SW NR
ENVE OUT
FM LIN
P.C
RF LIM.
AL
R.F LPF
BPF (R)
BPF (L)
BPF CONTROL
M.M
*2
DOD
0dB / 40dB
1.8MHz
1.4MHz
NT/PAL.VCO R
REC.PB LEVEL R
PAL.VCO R
NTSC.PBF
PAL.BPF
PAL.VCO L
NT/PAL.VCO L
REC/PB LEVEL L
RV205 4700
R225 12k 0.5%
R224 27k
R232 12k 0.5%
RV209 4700
C237 470p :CH
R223 2700
R222 2200
C236 0.01 :B
C250 0.01 :B
RV204 10k
RV208 10k
R221 1k
R220 11k
C235 0.01 :B
C234 1 50V
R235 1800
C233 0.0033 :PET
RV207 10k
R231 15k 0.5%
L202 180μH
C255 27P
C239 2200p :PET
C240 2200p :PET
C241 1500p :PET
C242 22 16V
R234 1k
RV206 2200
C245 0.022 :PET
R226 10k
C244 10 35V
R227 1k
C246 2.2 100V
C247 220 10V
C248 4.7 100V
C249 0.01 :PET
R203 180
C206 2.2 100V
C207 47 10V
C208 4.7 100V
C201 100 10V
R206 JWM'T
C209 10 50V
R209 330k
C212 47 10V
C213 47 10V
C214 47 10V
C215 10 50V
R210 JWM'T
C216 4.7 100V
C217 2.2 100V
JR203
JW224
MUTE
R218 15k 0.5%
RV202 10k
C232 100 10V
C231 0.01 :F
C230 2200p :PET
C229 2200p :PET
C228 1500p :PET
RV201 2200
R233 1k
C227 22 16V
R215 10k
C226 10 35V
R216 1k
C225 0.022 :PET
C224 2.2 100V
C223 220 10V
C222 4.7 100V
C221 0.01 :PET
C220 10 50V
C219 10 50V
C218 2.2 100V
R213 470k
R212 1k
TK1
TK15
IC
MUTE
11.9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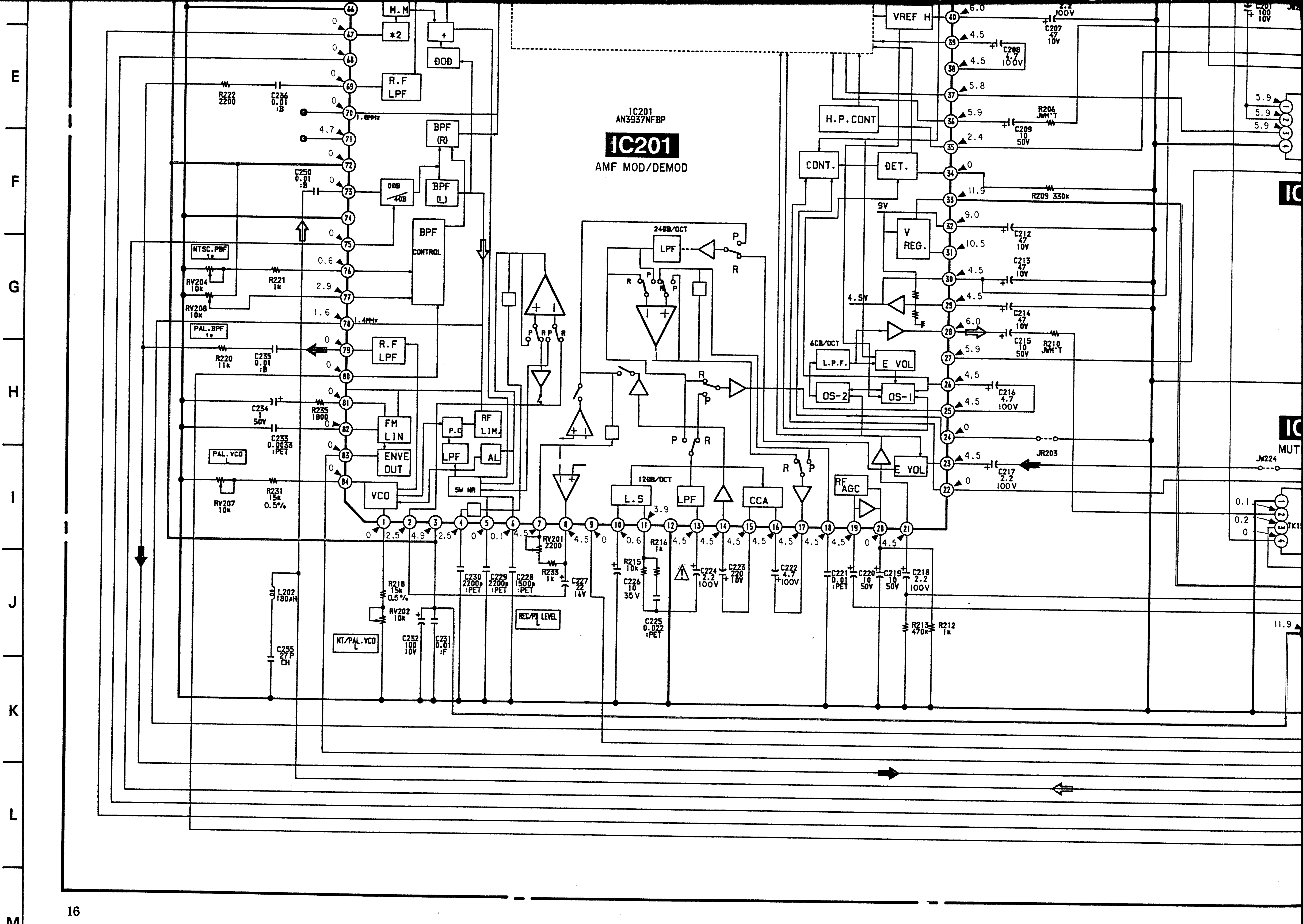
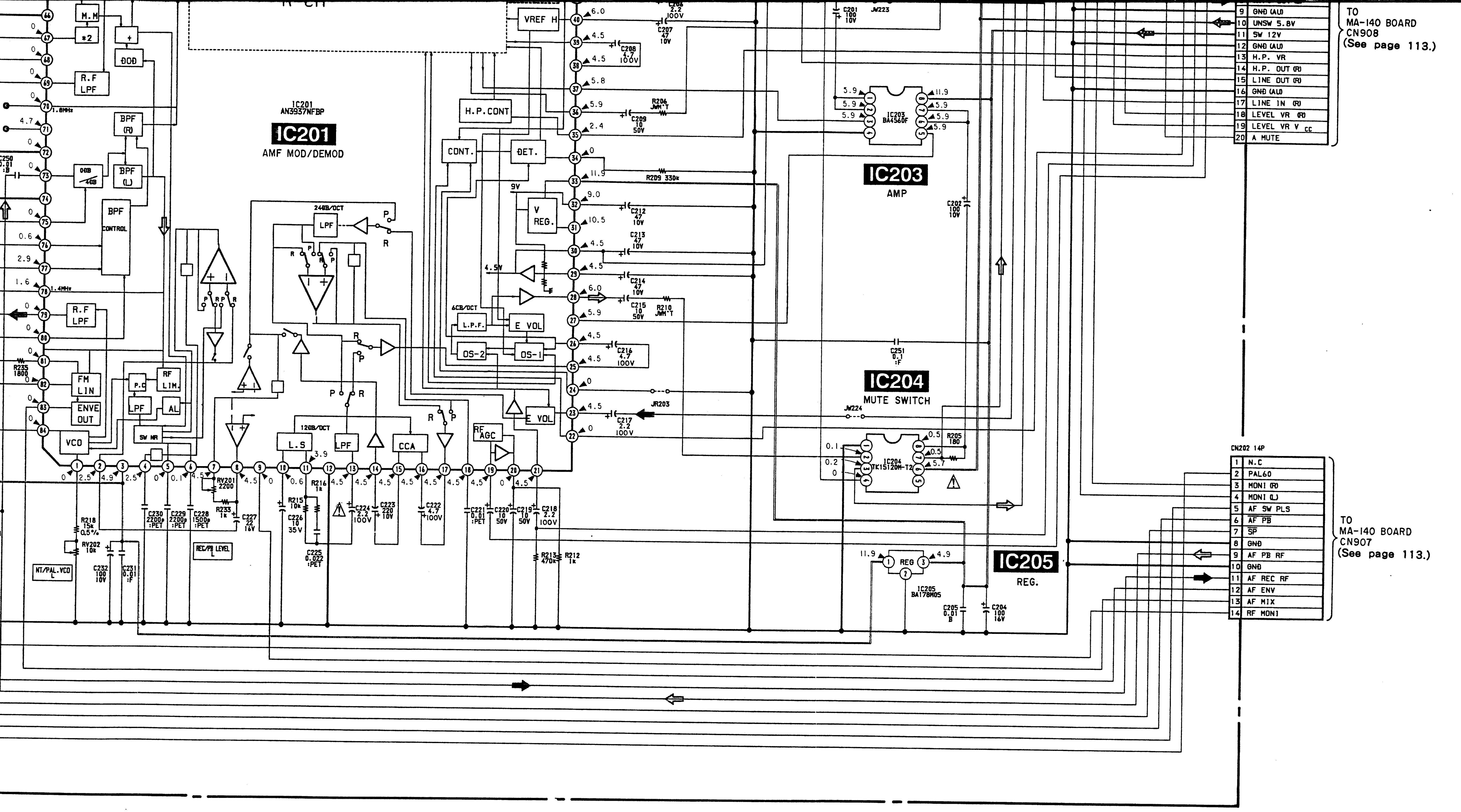
12
13
14
15
16
17
18
19
IC202
MUTE SWITCH
IC202
TK15120M-T2
IC203
BA4560F
IC203
AMP
IC204
MUTE SWITCH
IC204
TK15120M-T2
IC205
REG.
REG
IC201
AN3937NFBP
IC201
AMF MOD/DEMOD
R-CH
VCO
OUTPUT
VREF H
M.M
*2
+
DOD
R.F
LPF
BPF
(R)
BPF
(L)
BPF
CONTROL
0dB
-4dB
H.P.CONT
CONT.
DET.
V
REG.
E VOL
L.P.F.
OS-2
OS-1
6dB/OCT
24dB/OCT
12dB/OCT
LPF
L.S
CCA
RF
AGC
FM
LIN
ENVE
OUT
P.C
RF
LIM.
AL
SW NR
NT/PAL.VCO
R
NT/PAL.VCO
L
REC.PB LEVEL
R
REC/PB LEVEL
L
RV205
4700
R225
12k
0.5%
R224
27k
C239
2200p
:PET
C240
2200p
:PET
C241
1500p
:PET
C242
22
16V
R234
1k
RV206
2200
C245
0.022
:PET
R226
10k
C244
10
35V
R227
1k
C246
2.2
100V
C247
220
10V
C248
4.7
100V
C249
0.01
:PET
C250
0.01
:B
D201
1S2835
R203
180
C201
100
10V
JW223
C206
2.2
100V
C207
47
10V
C208
4.7
100V
R206
JW M T
C209
10
50V
R209 330k
C212
47
10V
C213
47
10V
C214
47
10V
C215
4.7
50V
R210
JW M T
C216
4.7
100V
C217
2.2
100V
JR203
JW224
C202
100
10V
C251
0.1
:F
R205
180
R235
1800
R218
15k
0.5%
RV202
10k
C232
100
10V
C231
0.01
:F
C230
2200p
:PET
C229
2200p
:PET
C228
1500p
:PET
RV201
2200
R233
1k
C227
22
16V
R215
10k
C226
10
35V
R216
1k
C225
0.022
:PET
C224
2.2
100V
C223
220
10V
C222
4.7
100V
C221
0.01
:PET
C220
10
50V
C219
10
50V
C218
2.2
100V
R213
470k
R212
1k
9V
4.5V
1.8MHz
1.4MHz
CN201 20P
1 MOD A OUT
2 GND (AU)
3 NOR A OUT
4 LEVEL VR (L)
5 LINE IN (L)
6 GND (AU)
7 LINE OUT (L)
8 H.P. OUT (L)
9 GND (AU)
10 UNSW 5.8V
11 SW 12V
12 GND (AU)
13 H.P. VR
14 H.P. OUT (R)
15 LINE OUT (R)
16 GND (AU)
17 LINE IN (R)
18 LEVEL VR (R)
19 LEVEL VR Vcc
20 A MUTE
TO
MA-140 BOARD
CN908
(See page 113.)
CN202 14P
1 N.C
2 PAL60
3 MONI (R)
4 MONI (L)
5 AF SW PLS
6 AF PB
7 SP
8 GND
9 AF PB RF
10 GND
11 AF REC RF
12 AF ENV
TO
MA-140 BOARD
CN907
(See page 113.)

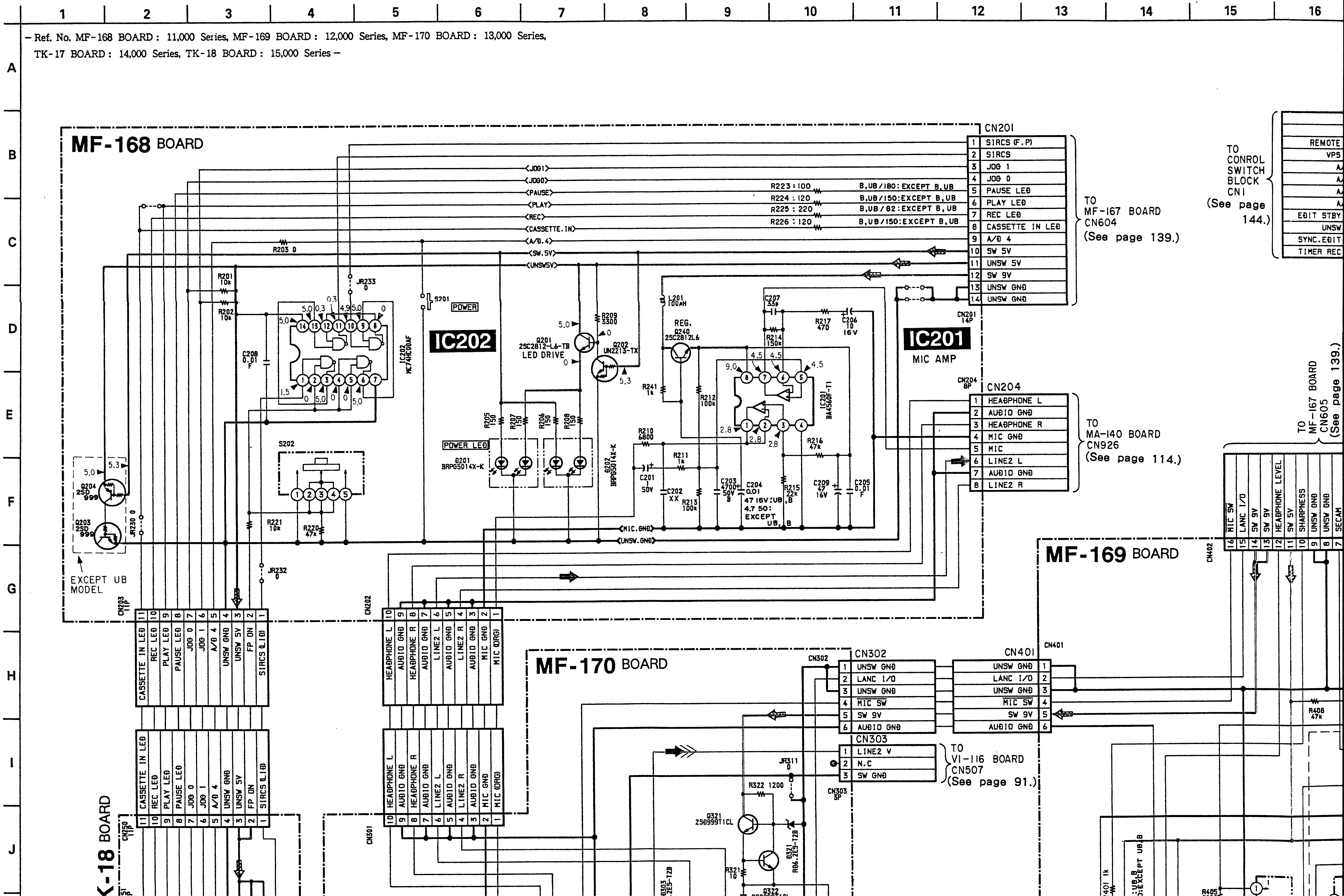

E
F
G
H
I
J
K
L
M
N
IC201
AN3937NFBP
IC201
AMF MOD/DEMOD
M.M
*2
DOD
R.F LPF
BPF (R)
BPF (L)
0dB / -4dB
BPF CONTROL
R.F LPF
FM LIN
ENVE OUT
VCO
P.C
RF LIM.
LPF
AL
SW NR
VREF H
H.P.CONT
CONT.
DET.
V REG.
L.P.F.
E VOL
OS-2
OS-1
E VOL
RF AGC
L.S
LPF
CCA
24dB/OCT
12dB/OCT
6dB/OCT
NTSC.PBF fo
PAL.BPF fo
PAL.VCO L
NT/PAL.VCO L
REC/PB LEVEL L
RV204 10k
RV208 10k
R221 1k
R222 2200
C236 0.01 :B
C250 0.01 :B
R220 11k
C235 0.01 :B
C234 1 50V
R235 1800
C233 0.0033 :PET
RV207 10k
R231 15k 0.5%
L202 180μH
C255 27P CH
R218 15k 0.5%
RV202 10k
C232 100 10V
C231 0.01 :F
C230 2200p :PET
C229 2200p :PET
C228 1500p :PET
RV201 2200
R233 1k
C227 22 16V
R215 10k
C226 10 35V
R216 1k
C225 0.022 :PET
C224 2.2 100V
C223 220 10V
C222 4.7 100V
C221 0.01 :PET
C220 10 50V
C219 10 50V
C218 2.2 100V
R213 470k
R212 1k
C207 47 10V
C208 4.7 100V
R206 JWM'T
C209 10 50V
R209 330k
C212 47 10V
C213 47 10V
C214 47 10V
C215 10 50V
R210 JWM'T
C216 4.7 100V
C217 2.2 100V
JR203
JW224
9V
4.5V
MUT
TK1
16

- **Signal paith**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC				➡
PB				⇨


IC201
AN3937NFBP
IC201
AMF MOD/DEMOD
M.M
*2
R.F LPF
BPF (R)
BPF (L)
BPF CONTROL
0dB / -4dB
FM LIN
ENVE OUT
VCO
P.C
RF LIM.
LPF
AL
SW NR
L.S
CCA
RF AGC
E VOL
OS-1
OS-2
L.P.F.
V REG.
CONT.
DET.
H.P.CONT
VREF H
24dB/OCT
12dB/OCT
6dB/OCT
RV201 2200
RV202 10k
R218 15k 0.5%
R235 1800
R233 1k
R215 10k
R216 1k
R213 470k
R212 1k
R206 JW*T
R209 330k
R210 JW*T
R205 180
C250 0.01 :B
C232 100 10V
C231 0.01 :F
C230 2200p :PET
C229 2200p :PET
C228 1500p :PET
C227 22 16V
C226 10 35V
C225 0.022 :PET
C224 2.2 100V
C223 220 10V
C222 4.7 100V
C221 0.01 :PET
C220 10 50V
C219 10 50V
C218 2.2 100V
C206 2.2 100V
C207 47 10V
C208 4.7 100V
C209 10 50V
C212 47 10V
C213 47 10V
C214 47 10V
C215 10 50V
C216 4.7 100V
C217 2.2 100V
C201 100 10V
C202 100 10V
C251 0.1 :F
C205 0.01 B
C204 100 16V
JW223
JW224
JR203
NT/PAL.VCO L
REC/PB LEVEL L
IC203
BA4560F
IC203
AMP
IC204
TK15120M-T2
IC204
MUTE SWITCH
IC205
BA178M05
IC205
REG.
REG
9 GND (AU)
10 UNSW 5.8V
11 SW 12V
12 GND (AU)
13 H.P. VR
14 H.P. OUT (R)
15 LINE OUT (R)
16 GND (AU)
17 LINE IN (R)
18 LEVEL VR (R)
19 LEVEL VR Vcc
20 A MUTE
TO MA-140 BOARD CN908 (See page 113.)
CN202 14P
1 N.C
2 PAL60
3 MONI (R)
4 MONI (L)
5 AF SW PLS
6 AF PB
7 SP
8 GND
9 AF PB RF
10 GND
11 AF REC RF
12 AF ENV
13 AF MIX
14 RF MONI
TO MA-140 BOARD CN907 (See page 113.)

MF-168/MF-169/MF-170 (FRONT PANEL), TK-17/TK-18 (RELAY) SCHEMATIC DIAGRAMS



– Ref. No. MF-168 BOARD : 11,000 Series, MF-169 BOARD : 12,000 Series, MF-170 BOARD : 13,000 Series, TK-17 BOARD : 14,000 Series, TK-18 BOARD : 15,000 Series –

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A
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C
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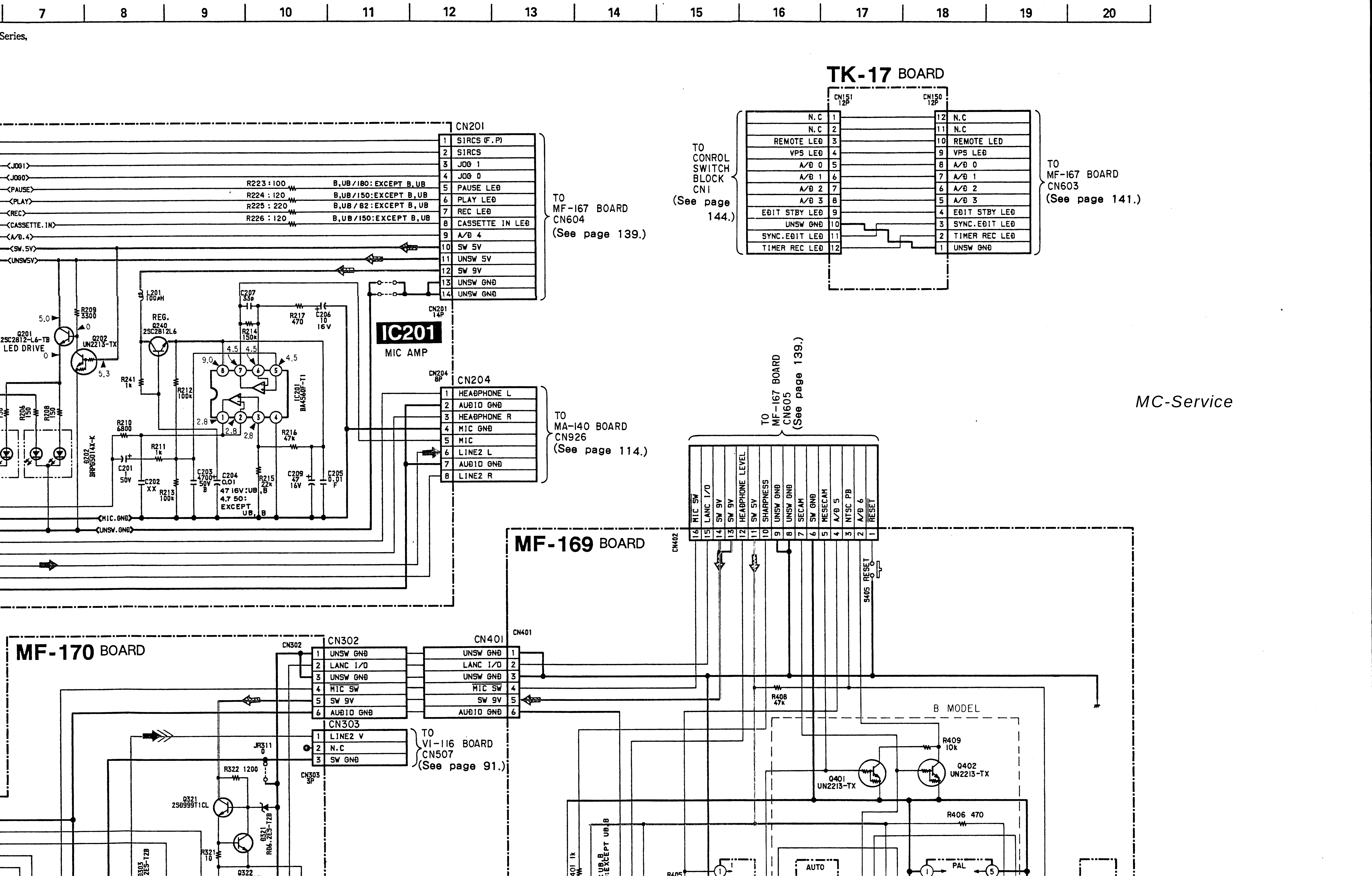
G
H
I
J
MF-168 BOARD
CN201
1 SIRCS (F.P)
2 SIRCS
3 JOG 1
4 JOG 0
5 PAUSE LED
6 PLAY LED
7 REC LED
8 CASSETTE IN LED
9 A/D 4
10 SW 5V
11 UNSW 5V
12 SW 9V
13 UNSW GND
14 UNSW GND
TO MF-167 BOARD CN604 (See page 139.)
TO CONROL SWITCH BLOCK CN1 (See page 144.)
REMOTE
VPS
EDIT STBY
UNSW
SYNC.EDIT
TIMER REC
R223 : 100
R224 : 120
R225 : 220
R226 : 120
B,UB/180:EXCEPT B,UB
B,UB/150:EXCEPT B,UB
B,UB/82:EXCEPT B,UB
B,UB/150:EXCEPT B,UB
(JOG1)
(JOG0)
(PAUSE)
(PLAY)
(REC)
(CASSETTE. IN)
(A/D. 4)
(SW. 5V)
(UNSW5V)
R203 0
R201 10k
R202 10k
JR233 0
S201
POWER
IC202
IC202 MC74HC00AF
C208 0.01 F
Q201 2SC2812-L6-TB LED DRIVE
Q202 UN2213-TX
R209 3300
L201 100µH
REG. Q240 2SC2812L6
C207 33p
R214 150k
R217 470
C206 10 16V
IC201 MIC AMP
CN201 14P
CN204 8P
IC201 BA4560F-T1
CN204
1 HEADPHONE L
2 AUDIO GND
3 HEADPHONE R
4 MIC GND
5 MIC
6 LINE2 L
7 AUDIO GND
8 LINE2 R
TO MA-140 BOARD CN926 (See page 114.)
TO MF-167 BOARD CN605 (See page 139.)
R241 1k
R212 100k
R216 47k
R210 6800
R211 1k
C201 1 50V
C202 XX
R213 100k
C203 4700 50V B
C204 0.01 47 16V:UB,B 4.7 50: EXCEPT UB,B
R215 22k
C209 47 16V
C205 0.01 F
S202
POWER LED
D201 BRPG5014X-K
R205 150
R207 150
R206 150
R208 150
D202 BRPG5014X-K
Q204 2SD999
Q203 2SD999
JR230 0
R221 10k
R220 47k
JR232 0
(MIC. GND)
(UNSW. GND)
EXCEPT UB MODEL
CN203 11P
CN202
11 CASSETTE IN LED
10 REC LED
9 PLAY LED
8 PAUSE LED
7 JOG 0
6 JOG 1
5 A/D 4
4 UNSW GND
3 UNSW 5V
2 FP ON
1 SIRCS (LID)
10 HEADPHONE L
9 AUDIO GND
8 HEADPHONE R
7 AUDIO GND
6 LINE2 L
5 AUDIO GND
4 LINE2 R
3 AUDIO GND
2 MIC GND
1 MIC (ORG)
MF-169 BOARD
CN402
16 MIC SW
15 LANC I/O
14 SW 9V
13 SW 9V
12 HEADPHONE LEVEL
11 SW 5V
10 SHARPNESS
9 UNSW GND
8 UNSW GND
7 SECAM
MF-170 BOARD
CN302
1 UNSW GND
2 LANC I/O
3 UNSW GND
4 MIC SW
5 SW 9V
6 AUDIO GND
CN401
CN303
1 LINE2 V
2 N.C
3 SW GND
TO VI-116 BOARD CN507 (See page 91.)
CN303 3P
JR311 0
R322 1200
Q321 2SD999T1CL
Q322
R321 10
D321 RD6.2ES-T2B
R408 47k
R405
TK-18 BOARD
CN250 11P
CN301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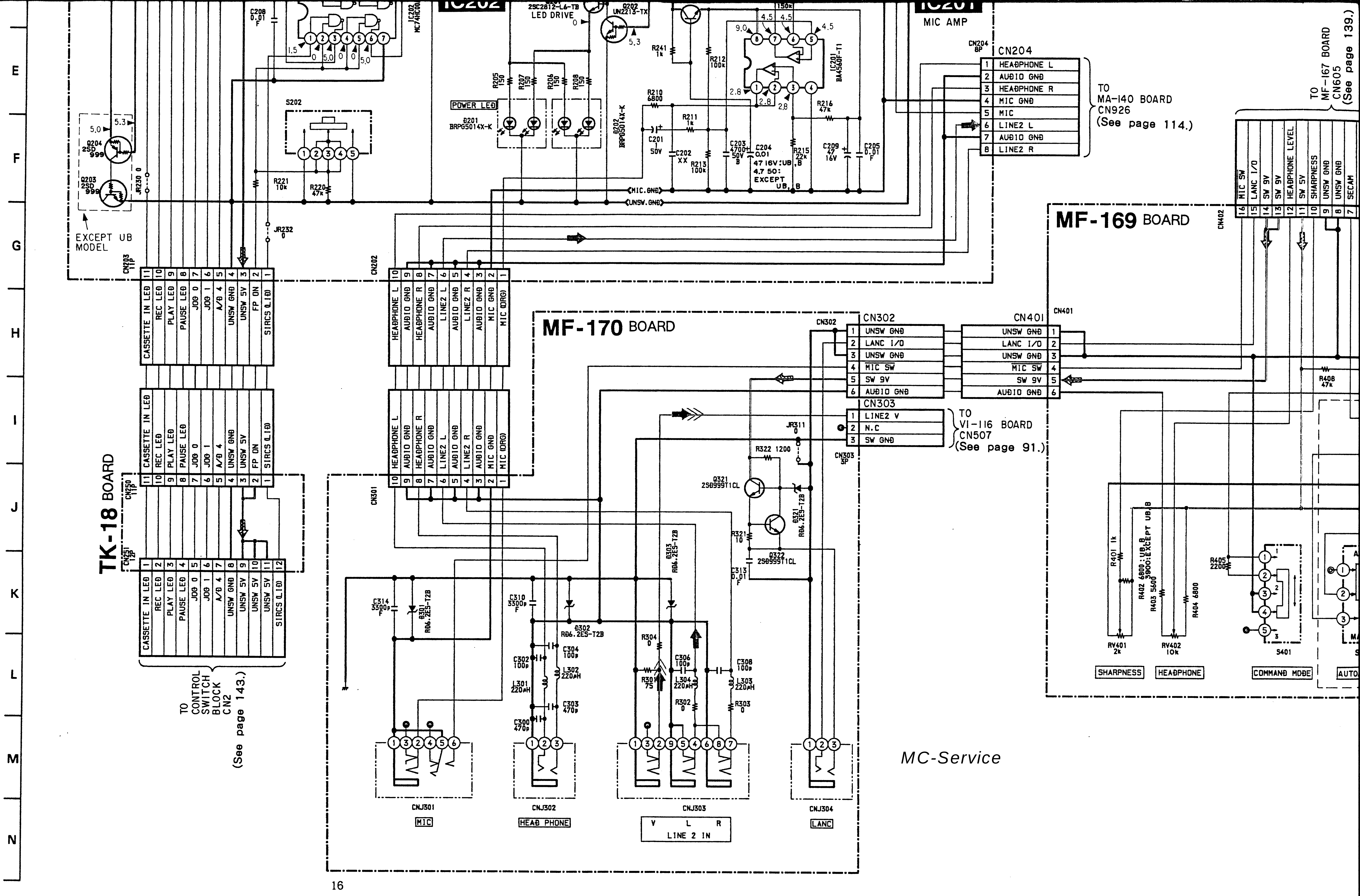
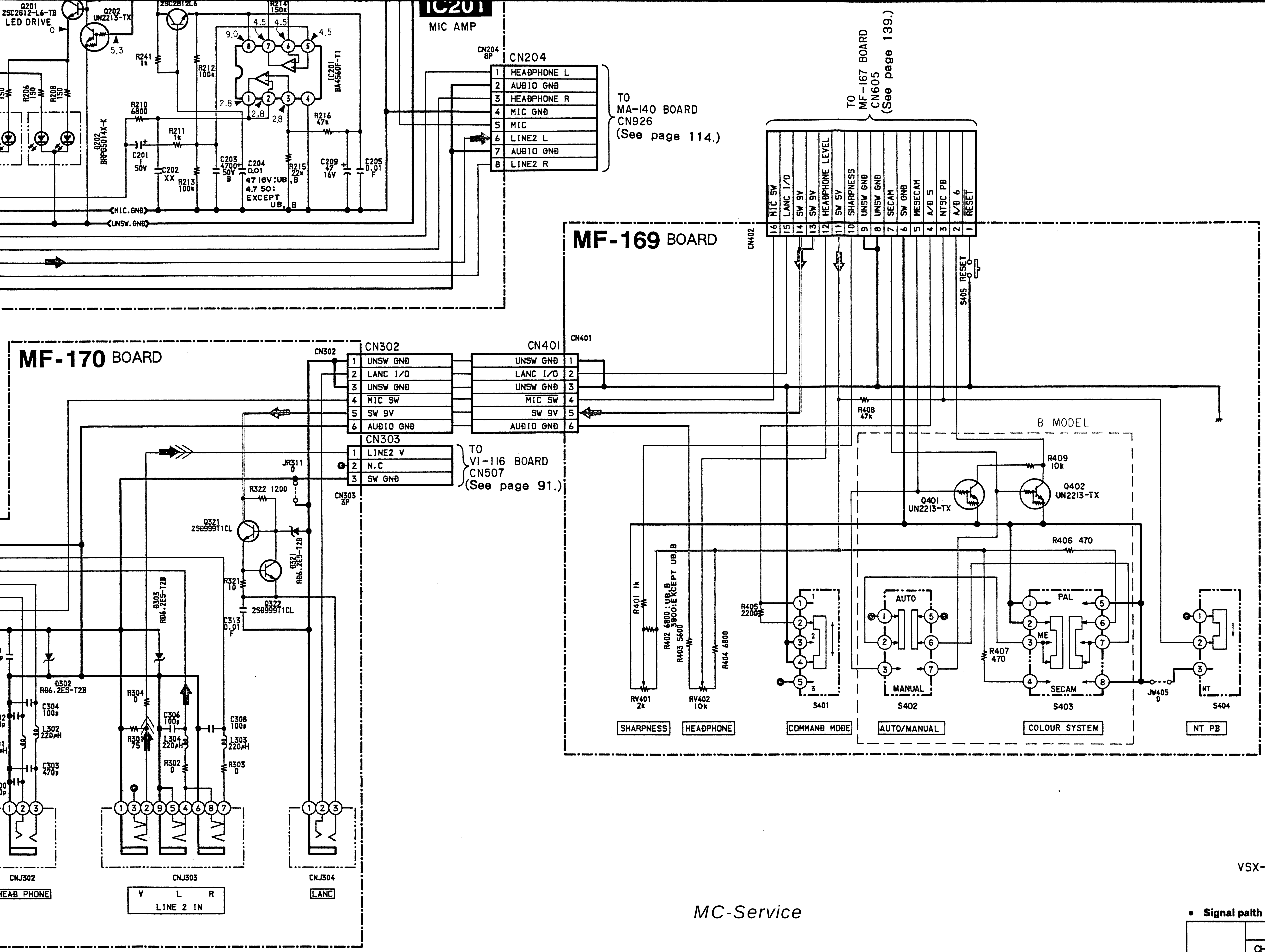
TK-17 BOARD
CN151 12P
CN150 12P
N.C
N.C
REMOTE LED
VPS LED
A/D 0
A/D 1
A/D 2
A/D 3
EDIT STBY LED
UNSW GND
SYNC.EDIT LED
TIMER REC LED
TO CONROL SWITCH BLOCK CN1 (See page 144.)
TO MF-167 BOARD CN603 (See page 141.)
CN201
SIRCS (F.P)
SIRCS
JOG 1
JOG 0
PAUSE LED
PLAY LED
REC LED
CASSETTE IN LED
A/D 4
SW 5V
UNSW 5V
SW 9V
UNSW GND
UNSW GND
TO MF-167 BOARD CN604 (See page 139.)
CN201 14P
<JOG1>
<JOG0>
<PAUSE>
<PLAY>
<REC>
<CASSETTE.IN>
<A/D.4>
<SW.5V>
<UNSW5V>
R223 : 100
R224 : 120
R225 : 220
R226 : 120
B,UB/180:EXCEPT B,UB
B,UB/150:EXCEPT B,UB
B,UB/82:EXCEPT B,UB
B,UB/150:EXCEPT B,UB
IC201
MIC AMP
IC201 BA4560F-T1
L201 100µH
REG. Q240 2SC2812L6
Q201 2SC2812-L6-TB LED DRIVE
Q202 UN2213-TX
R209 3300
R241 1k
R212 100k
R214 150k
R217 470
C207 33p
C206 10 16V
R210 6800
R211 1k
R216 47k
R215 22k
R213 100k
C201 1 50V
C202 XX
C203 4700 50V B
C204 0.01
47 16V:UB,B
4.7 50: EXCEPT UB,B
C209 47 16V
C205 0.01 F
R206 150
R208 150
D202 BRPG5014X-K
5.0
0
0
5.3
9.0
4.5
4.5
4.5
2.8
2.8
2.8
<MIC.GND>
<UNSW.GND>
CN204 8P
CN204
HEADPHONE L
AUDIO GND
HEADPHONE R
MIC GND
MIC
LINE2 L
AUDIO GND
LINE2 R
TO MA-140 BOARD CN926 (See page 114.)
TO MF-167 BOARD CN605 (See page 139.)
MIC SW
LANC I/O
SW 9V
SW 9V
HEADPHONE LEVEL
SW 5V
SHARPNESS
UNSW GND
UNSW GND
SECAM
SW GND
MESECAM
A/D 5
NTSC PB
A/D 6
RESET
CN402
MF-169 BOARD
S405 RESET
CN401
CN401
UNSW GND
LANC I/O
UNSW GND
MIC SW
SW 9V
AUDIO GND
R408 47k
B MODEL
R409 10k
Q401 UN2213-TX
Q402 UN2213-TX
R406 470
AUTO
PAL
MF-170 BOARD
CN302
CN302
CN303
LINE2 V
N.C
SW GND
CN303 3P
TO VI-116 BOARD CN507 (See page 91.)
JR311 0
R322 1200
Q321 2SD999T1CL
D321 RD6.2ES-T2B
R321 10
Q322



IC202
IC201
MIC AMP
2SC2812-L6-TB LED DRIVE
Q202 UN2213-TX
IC202 MC74HC00
IC201 BA4560F-T1
S202
POWER LED
D201 BRPG5014X-K
D202 BRPG5014X-K
Q204 2SD999
Q203 2SD999
EXCEPT UB MODEL
CN204 8P
CN204
1 HEADPHONE L
2 AUDIO GND
3 HEADPHONE R
4 MIC GND
5 MIC
6 LINE2 L
7 AUDIO GND
8 LINE2 R
TO MA-140 BOARD CN926 (See page 114.)
TO MF-167 BOARD CN605 (See page 139.)
MF-169 BOARD
CN402
16 MIC SW
15 LANC I/O
14 SW 9V
13 SW 9V
12 HEADPHONE LEVEL
11 SW 5V
10 SHARPNESS
9 UNSW GND
8 UNSW GND
7 SECAM
CN203 11P
CN202
1 MIC (ORG)
2 MIC GND
3 AUDIO GND
4 LINE2 R
5 AUDIO GND
6 LINE2 L
7 AUDIO GND
8 HEADPHONE R
9 AUDIO GND
10 HEADPHONE L
1 SIRCS (L.ID)
2 FP ON
3 UNSW 5V
4 UNSW GND
5 A/D 4
6 JOG 1
7 JOG 0
8 PAUSE LED
9 PLAY LED
10 REC LED
11 CASSETTE IN LED
MF-170 BOARD
CN302
1 UNSW GND
2 LANC I/O
3 UNSW GND
4 MIC SW
5 SW 9V
6 AUDIO GND
CN401
CN303
1 LINE2 V
2 N.C
3 SW GND
TO VI-116 BOARD CN507 (See page 91.)
CN303 3P
CN301
CN250 11P
CN251 12P
TK-18 BOARD
12 SIRCS (L.ID)
11 UNSW 5V
10 UNSW 5V
9 UNSW 5V
TO CONTROL SWITCH BLOCK CN2 (See page 143.)
Q321 2SB999T1CL
Q322 2SB999T1CL
D321 RD6.2E5-T2B
D301 RD6.2E5-T2B
D302 RD6.2E5-T2B
D303 RD6.2E5-T2B
CNJ301 MIC
CNJ302 HEAD PHONE
CNJ303 V L R LINE 2 IN
CNJ304 LANC
R401 1k
R402 6800:UB,B 3900:EXCEPT UB,B
R403 5600
R404 6800
R405 2200
R408 47k
RV401 2k
RV402 10k
S401
SHARPNESS
HEADPHONE
COMMAND MODE
AUTO
MIC.GND
UNSW.GND
E
F
G
H
I
J
K
L
M
N
16


IC201
MIC AMP
Q201 2SC2812-L6-TB LED DRIVE
Q202 UN2213-TX
IC201 BA4560F-T1
R241 1k
R212 100k
R214 150k
R206 150
R208 150
R210 6800
R211 1k
R213 100k
R215 22k
R216 47k
C201 1 50V
C202 XX
C203 4700 50V B
C204 0.01 47 16V:UB,B 4.7 50: EXCEPT UB,B
C209 47 16V
C205 0.01 F
D202 BRPG5014X-K
MIC.GND
UNSW.GND
CN204 8P
CN204
1 HEADPHONE L
2 AUDIO GND
3 HEADPHONE R
4 MIC GND
5 MIC
6 LINE2 L
7 AUDIO GND
8 LINE2 R
TO MA-140 BOARD CN926 (See page 114.)
TO MF-167 BOARD CN605 (See page 139.)
MF-169 BOARD
CN402
16 MIC SW
15 LANC I/O
14 SW 9V
13 SW 9V
12 HEADPHONE LEVEL
11 SW 5V
10 SHARPNESS
9 UNSW GND
8 UNSW GND
7 SECAM
6 SW GND
5 MESECAM
4 A/D 5
3 NTSC PB
2 A/D 6
1 RESET
S405 RESET
CN401
CN401
1 UNSW GND
2 LANC I/O
3 UNSW GND
4 MIC SW
5 SW 9V
6 AUDIO GND
R408 47k
B MODEL
R409 10k
Q401 UN2213-TX
Q402 UN2213-TX
R406 470
R401 1k
R402 6800:UB,B 3900:EXCEPT UB,B
R403 5600
R404 6800
R405 2200
R407 470
RV401 2k
RV402 10k
S401
S402
S403
S404
JW405 0
AUTO
MANUAL
PAL
ME
SECAM
NT
SHARPNESS
HEADPHONE
COMMAND MODE
AUTO/MANUAL
COLOUR SYSTEM
NT PB
MF-170 BOARD
CN302
CN302
1 UNSW GND
2 LANC I/O
3 UNSW GND
4 MIC SW
5 SW 9V
6 AUDIO GND
CN303
1 LINE2 V
2 N.C
3 SW GND
CN303 3P
TO VI-116 BOARD CN507 (See page 91.)
JR311 0
R322 1200
Q321 2SB999T1CL
D321 RB6.2E5-T2B
R321 10
Q322 2SB999T1CL
C313 0.01 F
D303 RB6.2E5-T2B
D302 RB6.2E5-T2B
C304 100p
L302 220μH
C303 470p
R304 0
R301 75
C306 100p
L304 220μH
R302 0
C308 100p
L303 220μH
R303 0
CNJ302
HEAD PHONE
CNJ303
V L R
LINE 2 IN
CNJ304
LANC

VSX-1761

• **Signal palth**

	VIDEO Signal			AUDIO Signal
	CHROMA	Y	Y/CHROMA	
REC			⇛>>	➡
PB				

FRONT PANEL FRONT PANEL

MF-168/MF-169/MF-170 (FRONT PANEL), TK-17/TK-18 (RELAY) PRINTED WIRING BOARDS

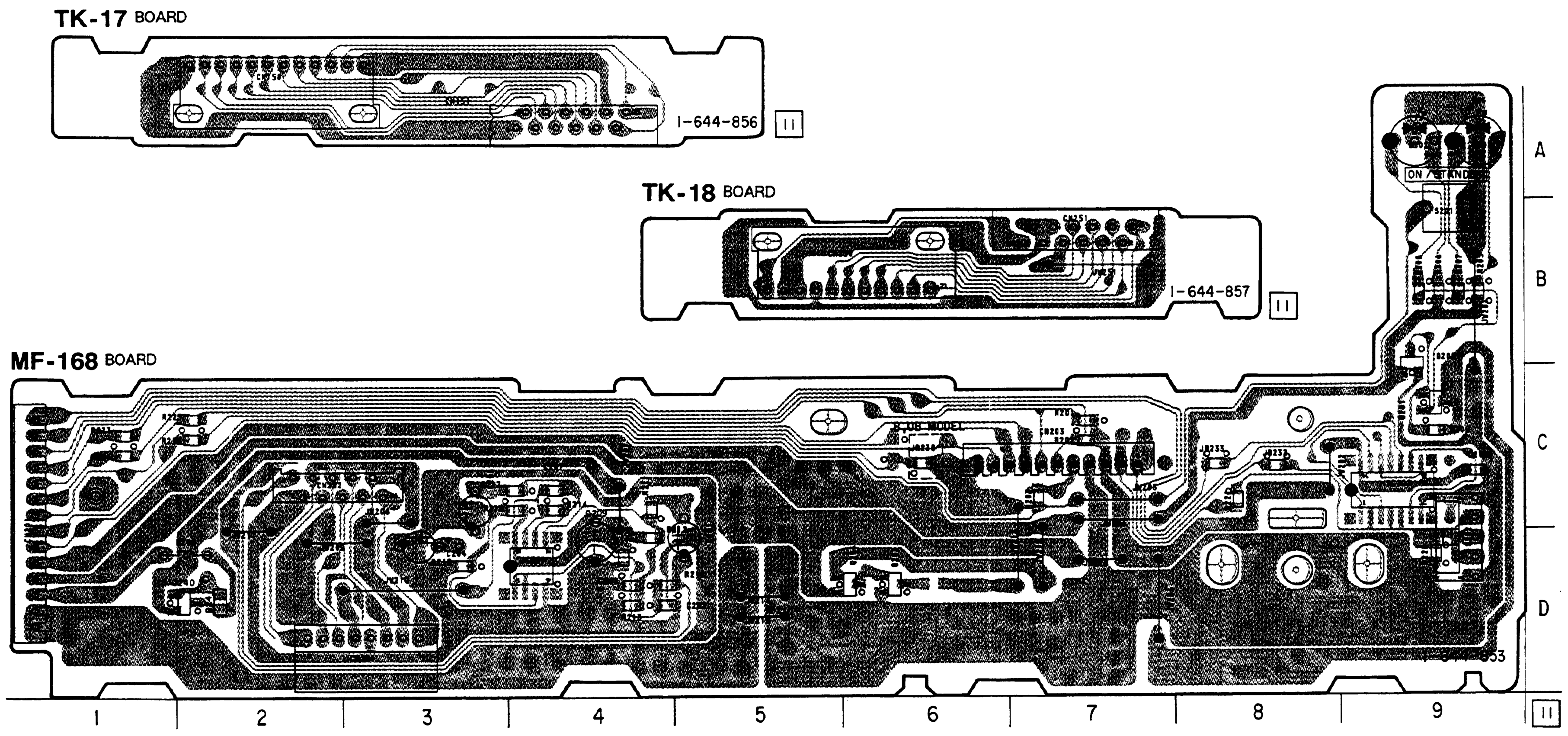
- Ref. No. MF-168 BOARD : 11,000 Series, MF-169 BOARD : 12,000 Series, MF-170 BOARD : 13,000 Series, TK-17 BOARD : 14,000 Series, TK-18 BOARD : 15,000 Series –

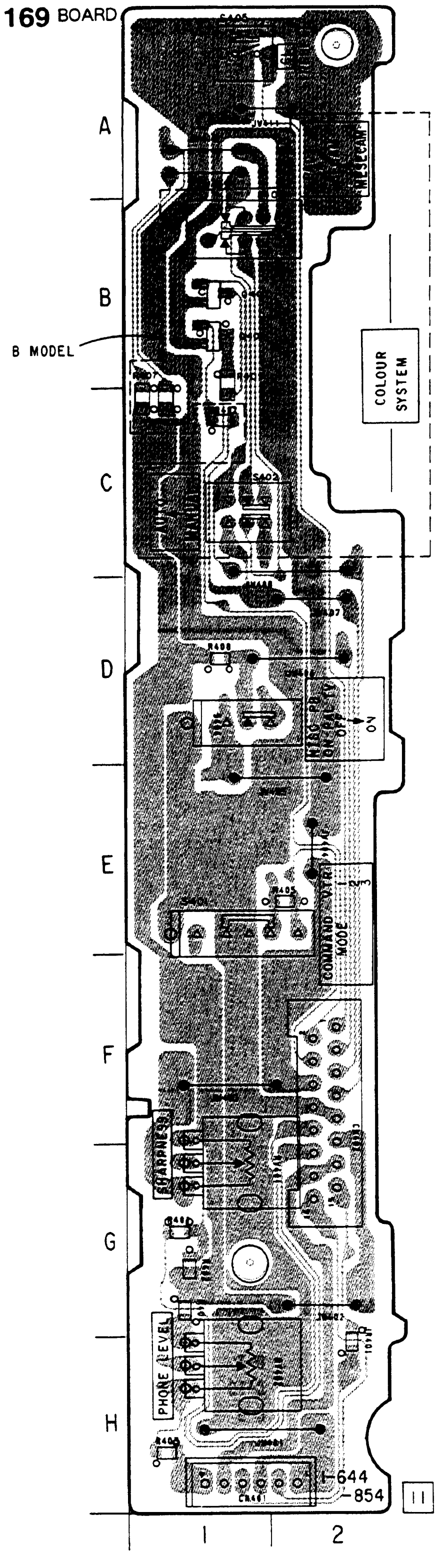
MF-168 BOARD

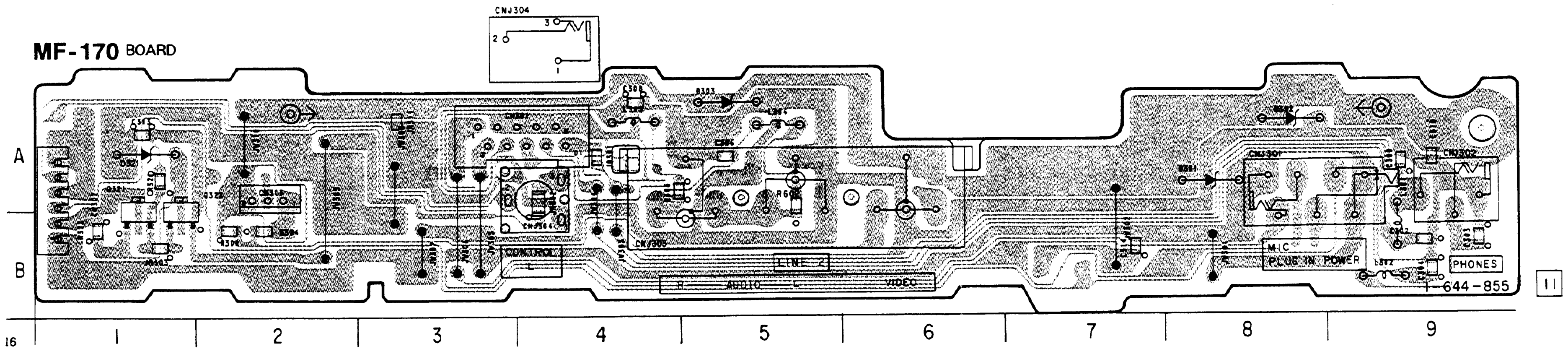
D101	A-9
D102	A-9
IC201	D-3
IC202	C-9
Q201	C-9
Q202	B-9
Q203	D-6
Q204	D-6
Q240	D-2

MF-170 BOARD

D301	A-8
D302	A-8
D303	A-5
D321	A-1
Q322	A-2


TK-17 BOARD
1-644-856
11
TK-18 BOARD
1-644-857
11
MF-168 BOARD
ON/STANDBY
UB MODEL
A
B
C
D
1
2
3
4
5
6
7
8
9
11


MF-169 BOARD
A
B
B MODEL
COLOUR SYSTEM
C
D
E
F
G
H
PHONE LEVEL
1-644-854
1
2
11


MF-170 BOARD
CNJ304
A
B
CONTROL
LINE 2
AUDIO
VIDEO
MIC
PLUG IN POWER
PHONES
1-644-855
11
16
1
2
3
4
5
6
7
8
9

IC

IC201	8-759-923-90	BA4560 (EXCEPT UB)
IC201	8-759-924-46	BA4560F (UK)
IC202	8-759-032-32	MC74HC132AF

TRANSISTOR

Q201	8-729-230-49	2SC2712-G (UB)
Q202	8-729-421-19	UN2213 (UB)
Q203	8-729-140-75	2SD999-CLCK (EXCEPT UB)
Q204	8-729-140-75	2SD999-CLCK (EXCEPT UB)
Q240	8-729-230-49	2SC2712-G (UB)

TRANSISTOR

Q321	8-729-140-75	2SD999-CLCK (UB)
Q322	8-729-140-75	2SD999-CLCK (UB)

MF-169 BOARD

Q401	B-1
Q402	B-1

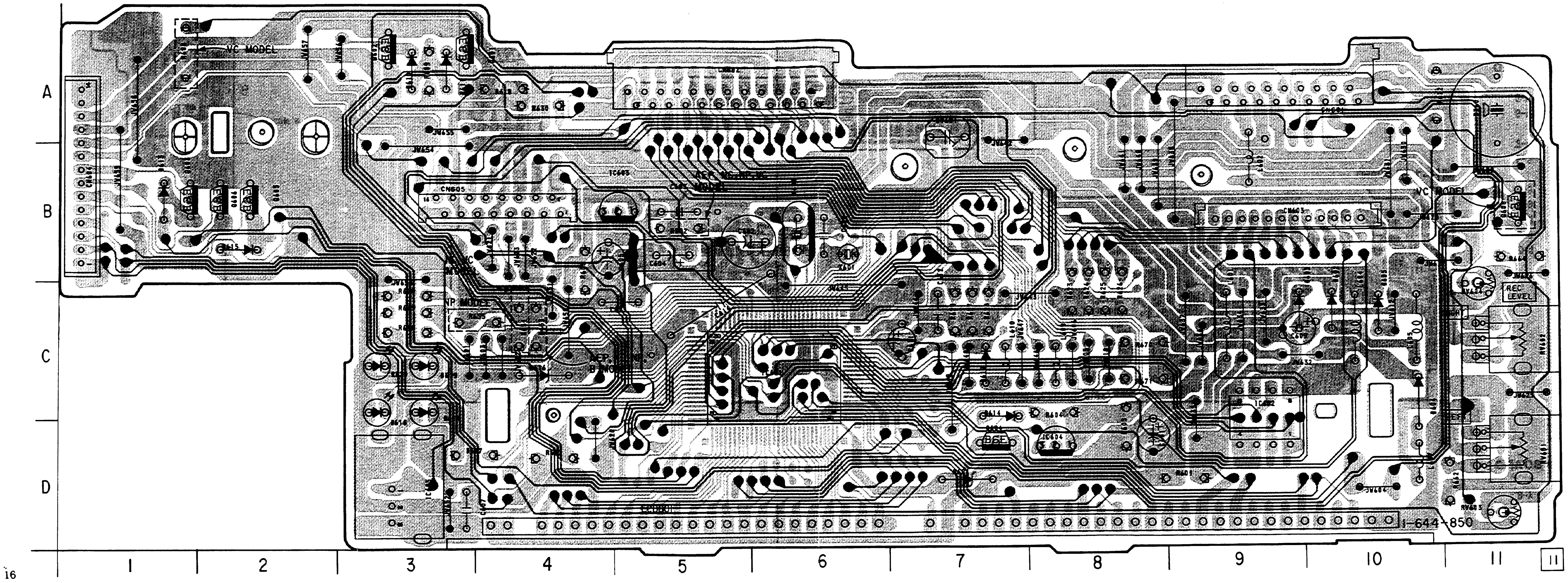
TRANSISTER

Q401	8-729-421-19	UN2213-TX(B)
Q402	8-729-421-19	UN2213-TX(B)

MF-167 (DISPLAY PANEL) PRINTED WIRING BOARD

– Ref. No. MF-167 BOARD : 16,000 Series –

MF-167 BOARD


A
B
C
D
1
2
3
4
5
6
7
8
9
10
11
11
16
VC MODEL
NP MODEL
VC MODEL
CN605
IC603
REC LEVEL
1-644-850

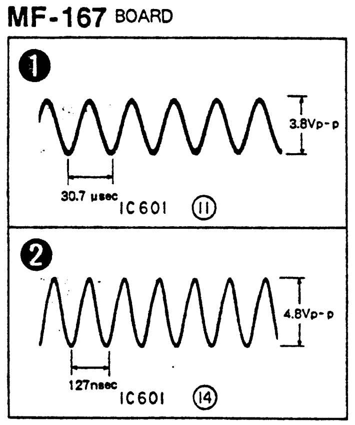
MF-167 BOARD

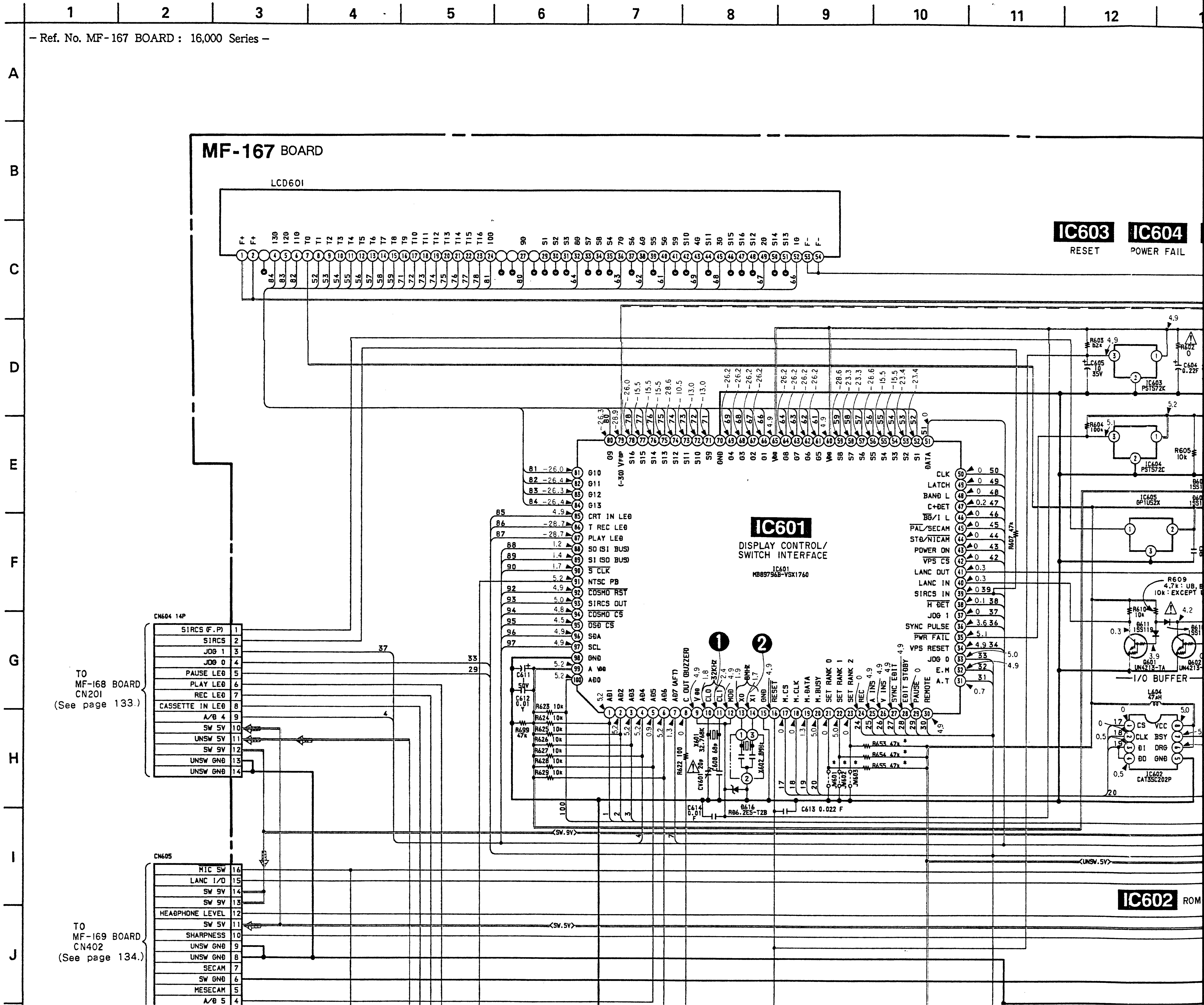
D601	D-7	IC601	C-5
D602	C-10	IC602	D-9
D603	C-9	IC603	B-5
D604	C-10	IC604	D-8
D605	C-10	IC605	D-3
D610	A-3		
D611	A-3	Q601	A-4
D612	C-7	Q602	A-3
D613	B-1	Q603	B-1
D614	D-7	Q604	D-7
D615	B-2	Q605	B-2
D616	C-4	Q606	B-2
D617	C-3	Q608	B-11
D618	C-3		
D619	C-3		
D620	C-3		

IC

IC601 8-759-078-00 MB89796B-VSX1760 (AEP/UB/NC/NP)
IC601 8-759-094-10 MB89796B-104 (VC)

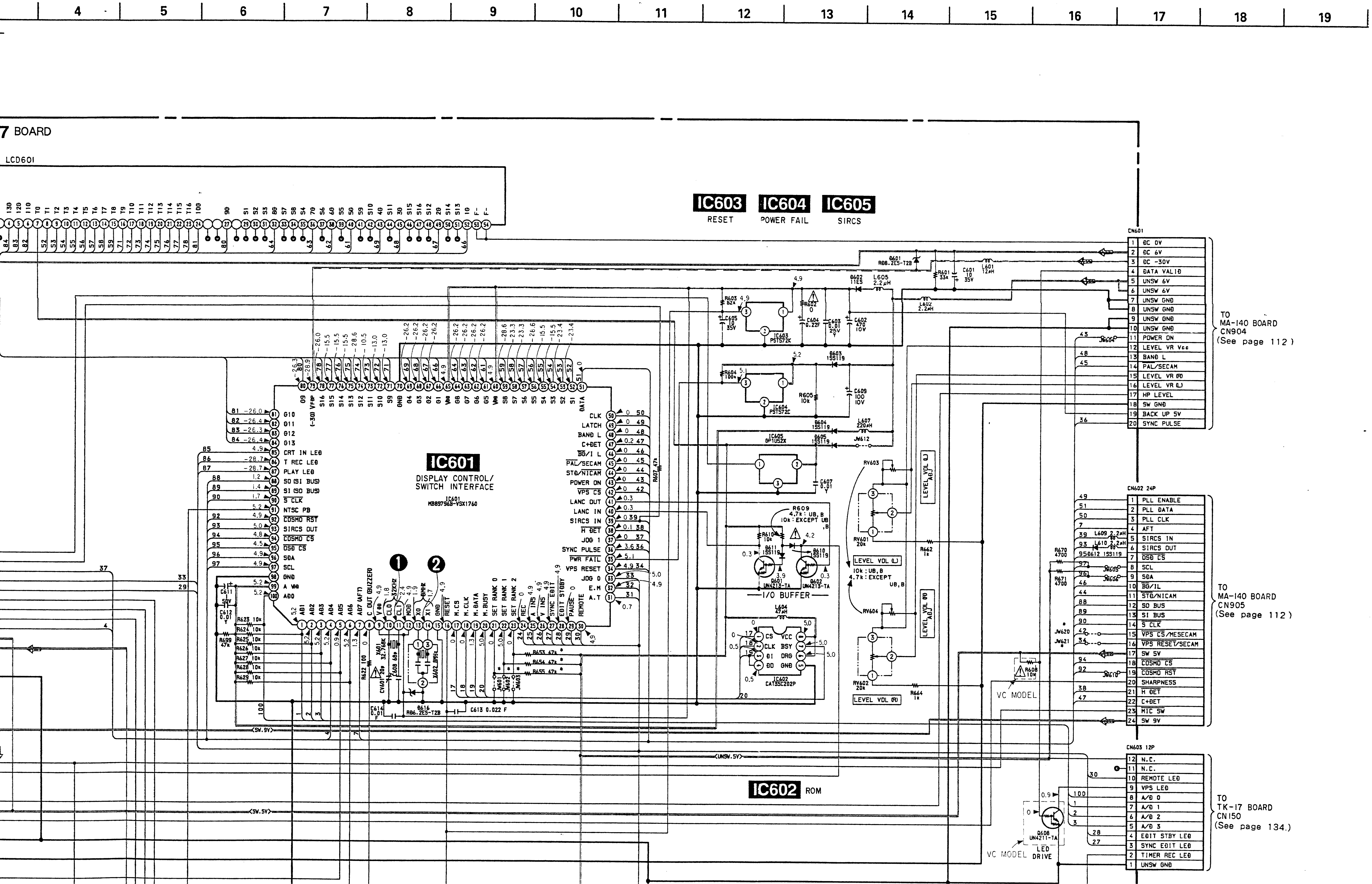
MF-167 (DISPLAY PANEL) SCHEMATIC DIAGRAM



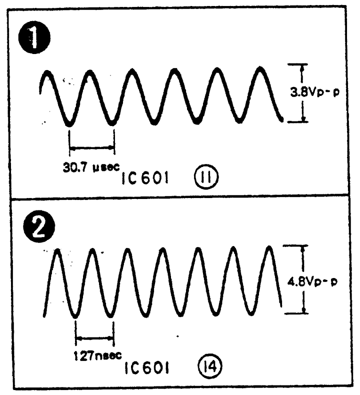

1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
I
J
MF-167 BOARD
LCD601
IC603
RESET
IC604
POWER FAIL
IC603 PST572K
IC604 PST572C
IC605 GP1U52X
R603 82k
C605 10 35V
R602 0
C604 0.22F
R604 100k
R605 10k
R607 47k
R609 4.7k : UB, E 10k : EXCEPT
R610 10k
Q611 1SS119
Q601 UN4213-TA
Q602 UN4213
I/O BUFFER
L604 47μH
IC602 CAT35C202P
CS
VCC
CLK
BSY
DI
ORG
DO
GND
IC602
ROM
IC601
DISPLAY CONTROL/ SWITCH INTERFACE
IC601 MB89796B-VSX1760
G10
G11
G12
G13
CRT IN LED
T REC LED
PLAY LED
SO (SI BUS)
SI (SO BUS)
S CLK
NTSC PB
COSMO RST
SIRCS OUT
COSMO CS
OSD CS
SDA
SCL
GND
A Vdd
ADO
CLK
LATCH
BAND L
C+DET
BG/I L
PAL/SECAM
STE/NICAM
POWER ON
VPS CS
LANC OUT
LANC IN
SIRCS IN
H DET
JOG 1
SYNC PULSE
PWR FAIL
VPS RESET
JOG 0
E.M
A.T
AD1
AD2
AD3
AD4
AD5
AD6
AD7 (AFT)
C OUT (BUZZER)
V dd
CLO
CLI
MOD
XO
XI
GND
RESET
M.CS
M.CLK
M.DATA
M.BUSY
SET RANK 0
SET RANK 1
SET RANK 2
REC
A INS
V INS
SYNC EDIT
EDIT STBY
PAUSE
REMOTE
(-30) VFDP
X601 32.768K
X602 8MHz
32kHz
8MHz
C611 50V
C612 0.01
R623 10k
R624 10k
R625 10k
R626 10k
R627 10k
R628 10k
R629 10k
R699 47k
R622 100
CV601 20P
C608 68P
C614 0.01 F
D616 RB6.2ES-T2B
C613 0.022 F
R653 47k
R654 47k
R655 47k
J601
J602
J603
<SW.9V>
<SW.5V>
<UNSW.5V>
CN604 14P
SIRCS (F.P) 1
SIRCS 2
JOG 1 3
JOG 0 4
PAUSE LED 5
PLAY LED 6
REC LED 7
CASSETTE IN LED 8
A/B 4 9
SW 5V 10
UNSW 5V 11
SW 9V 12
UNSW GND 13
UNSW GND 14
TO MF-168 BOARD CN201 (See page 133.)
CN605
MIC SW 16
LANC I/O 15
SW 9V 14
SW 9V 13
HEADPHONE LEVEL 12
SW 5V 11
SHARPNESS 10
UNSW GND 9
UNSW GND 8
SECAM 7
SW GND 6
MESECAM 5
A/B 5 4
TO MF-169 BOARD CN402 (See page 134.)

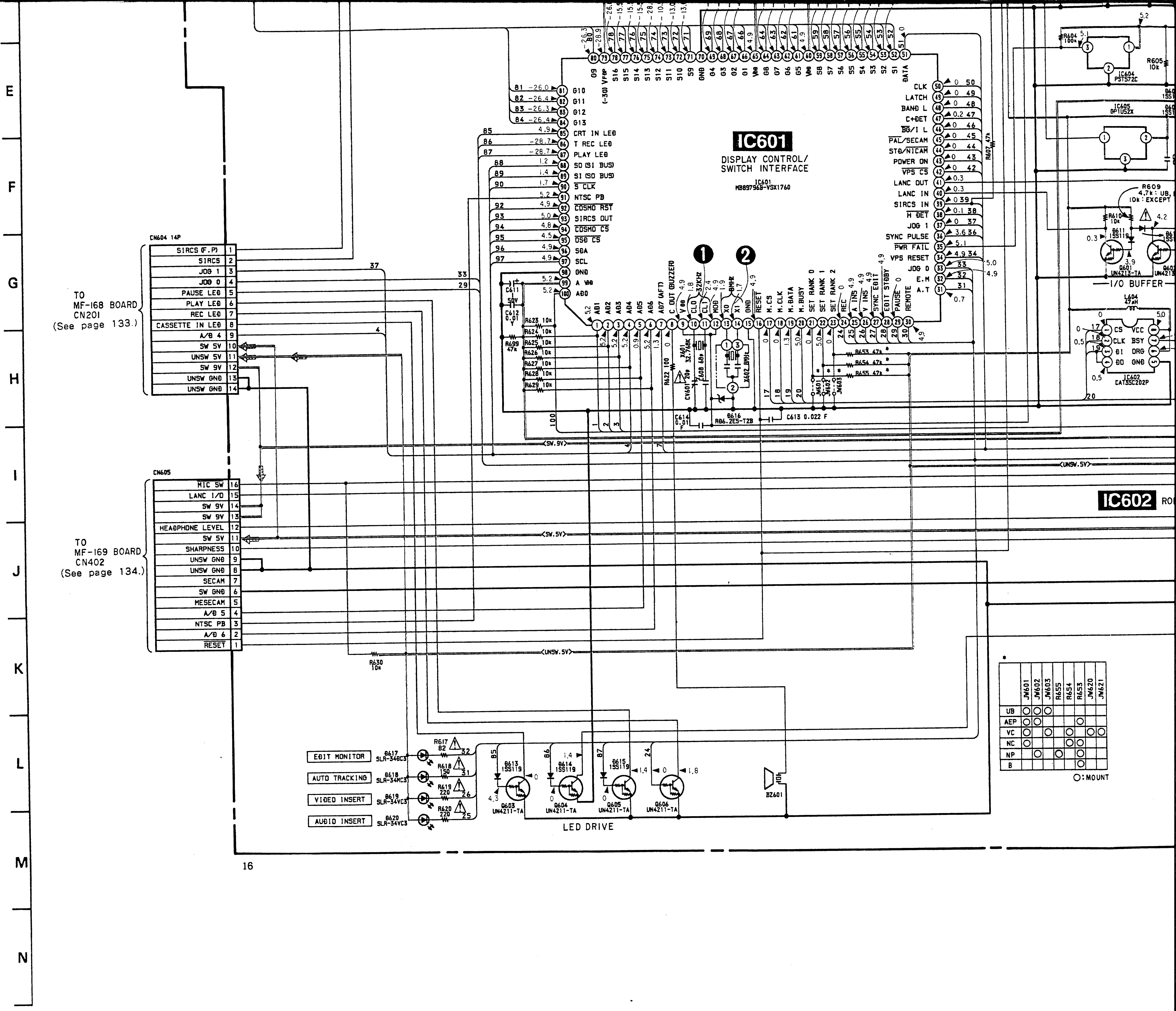
– Ref. No. MF-167 BOARD : 16,000 Series –

AGRAM


4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
7 BOARD
LCD601
IC603
RESET
IC604
POWER FAIL
IC605
SIRCS
IC601
DISPLAY CONTROL/
SWITCH INTERFACE
IC601
MB89796B-VSX1760
IC602
ROM
IC603
PST572K
IC604
PST572C
IC605
GP1U52X
IC602
CAT35C202P
I/O BUFFER
Q601
UN4213-TA
Q602
UN4213-TA
Q608
UN4211-TA
LED
DRIVE
VC MODEL
LEVEL VOL (L)
LEVEL VOL (R)
LEVEL VOL (L) ADJ
LEVEL VOL (R) ADJ
10k : UB, B
4.7k : EXCEPT UB, B
R609
4.7k : UB, B
10k : EXCEPT UB, B
CN601
1 ĐC 0V
2 ĐC 6V
3 ĐC -30V
4 DATA VALID
5 UNSW 6V
6 UNSW 6V
7 UNSW GND
8 UNSW GND
9 UNSW GND
10 UNSW GND
11 POWER ON
12 LEVEL VR Vcc
13 BAND L
14 PAL/SECAM
15 LEVEL VR (R)
16 LEVEL VR (L)
17 HP LEVEL
18 SW GND
19 BACK UP 5V
20 SYNC PULSE
TO
MA-140 BOARD
CN904
(See page 112)
CN602 24P
1 PLL ENABLE
2 PLL DATA
3 PLL CLK
4 AFT
5 SIRCS IN
6 SIRCS OUT
7 OSD CS
8 SCL
9 SDA
10 BG/IL
11 STĐ/NICAM
12 SO BUS
13 SI BUS
14 S CLK
15 VPS CS/MESECAM
16 VPS RESET/SECAM
17 SW 5V
18 COSMO CS
19 COSMO RST
20 SHARPNESS
21 H DET
22 C+DET
23 MIC SW
24 SW 9V
TO
MA-140 BOARD
CN905
(See page 112)
CN603 12P
12 N.C.
11 N.C.
10 REMOTE LED
9 VPS LED
8 A/D 0
7 A/D 1
6 A/D 2
5 A/D 3
4 EDIT STBY LED
3 SYNC EDIT LED
2 TIMER REC LED
1 UNSW GND
TO
TK-17 BOARD
CN150
(See page 134.)
CLK
LATCH
BAND L
C+DET
BG/I L
PAL/SECAM
STĐ/NICAM
POWER ON
VPS CS
LANC OUT
LANC IN
SIRCS IN
H DET
JOG 1
SYNC PULSE
PWR FAIL
VPS RESET
JOG 0
E.M
A.T
G10
G11
G12
G13
CRT IN LED
T REC LED
PLAY LED
SO (SI BUS)
SI (SO BUS)
S CLK
NTSC PB
COSMO RST
SIRCS OUT
COSMO CS
OSD CS
SDA
SCL
GND
A VDD
ADD
RESET
M.CS
M.CLK
M.DATA
M.BUSY
SET RANK 0
SET RANK 1
SET RANK 2
REC
A INS
V INS
SYNC EDIT
EDIT STBY
PAUSE
REMOTE
C OUT (BUZZER)
A07 (AFT)
32KHz
8MHz
X601 32.768K
X602 8MHz
R653 47k
R654 47k
R655 47k
C613 0.022 F
D616 RD6.2ES-T2B
D601 RD8.2ES-T2B
L605 2.2μH
L602 2.2μH
L601 12μH
L604 47μH
L607 220μH
(SW.9V)
(UNSW.5V)
(SW.5V)
❶
❷

MF-167 BOARD





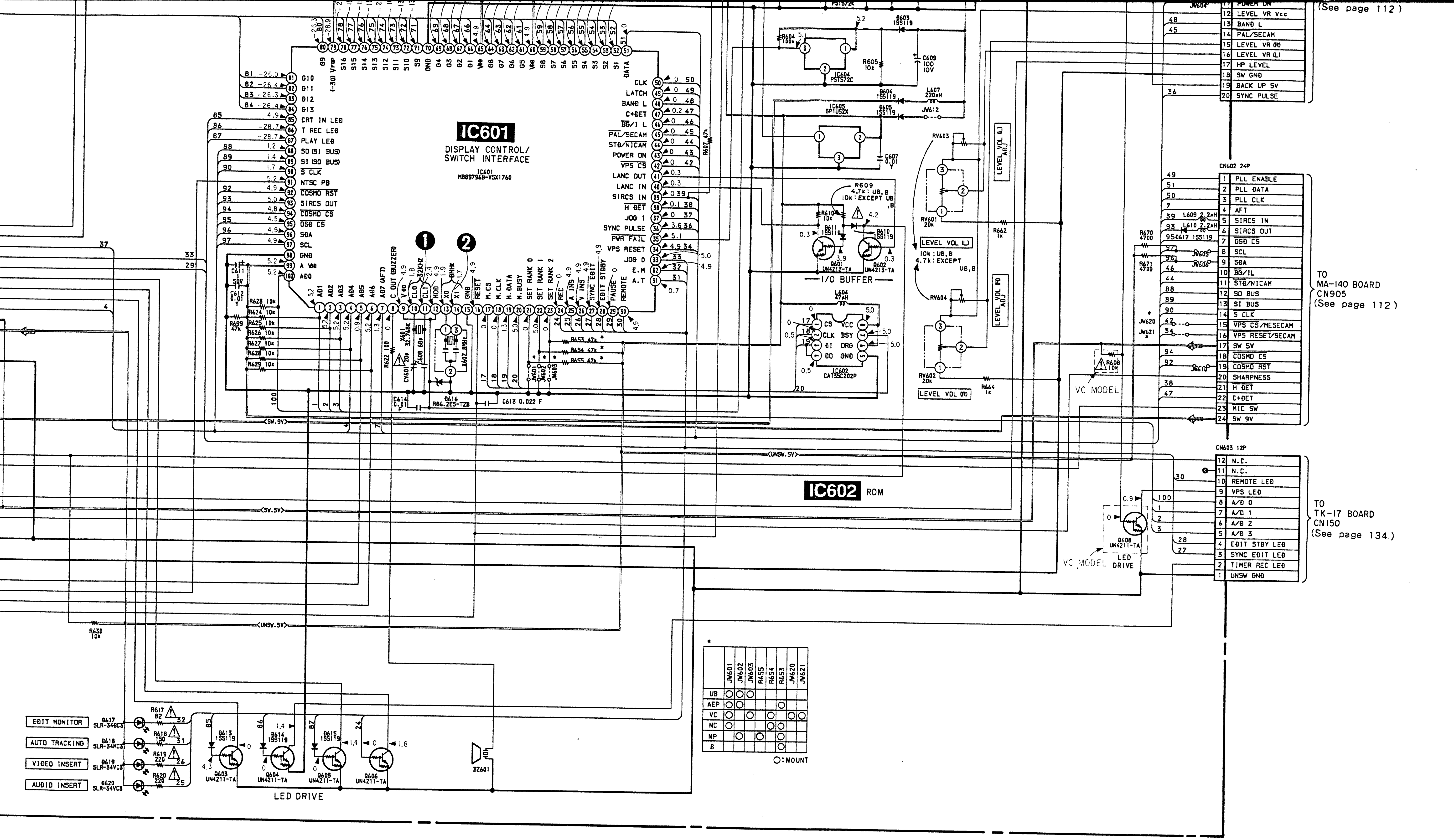
E
F
G
H
I
J
K
L
M
N
IC601
DISPLAY CONTROL/
SWITCH INTERFACE
IC601
MB89796B-VSX1760
CN604 14P
SIRCS (F.P) 1
SIRCS 2
JOG 1 3
JOG 0 4
PAUSE LED 5
PLAY LED 6
REC LED 7
CASSETTE IN LED 8
A/B 4 9
SW 5V 10
UNSW 5V 11
SW 9V 12
UNSW GND 13
UNSW GND 14
TO
MF-168 BOARD
CN201
(See page 133.)
CN605
MIC SW 16
LANC I/O 15
SW 9V 14
SW 9V 13
HEADPHONE LEVEL 12
SW 5V 11
SHARPNESS 10
UNSW GND 9
UNSW GND 8
SECAM 7
SW GND 6
MESECAM 5
A/B 5 4
NTSC PB 3
A/B 6 2
RESET 1
TO
MF-169 BOARD
CN402
(See page 134.)
G10
G11
G12
G13
CRT IN LED
T REC LED
PLAY LED
SO (SI BUS)
SI (SO BUS)
S CLK
NTSC PB
COSMO RST
SIRCS OUT
COSMO CS
OSD CS
SDA
SCL
GND
A VDD
ADO
CLK
LATCH
BAND L
C+DET
BG/I L
PAL/SECAM
STD/NICAM
POWER ON
VPS CS
LANC OUT
LANC IN
SIRCS IN
H DET
JOG 1
SYNC PULSE
PWR FAIL
VPS RESET
JOG 0
E.M
A.T
AD1
AD2
AD3
AD4
AD5
AD6
AD7 (AFT)
C OUT (BUZZER)
VDD
CLO
CLI
MOD
X0
X1
GND
RESET
M.CS
M.CLK
M.DATA
M.BUSY
SET RANK 0
SET RANK 1
SET RANK 2
REC
A INS
V INS
SYNC EDIT
EDIT STDBY
PAUSE
REMOTE
X601 32.768K
X602 8MHz
C611 1 50V
C612 0.01
R699 47k
R622 100
CV601 20p
C608 68p
D616 RD6.2ES-T2B
C614 0.01
C613 0.022 F
R653 47k
R654 47k
R655 47k
JW601
JW602
JW603
R604 100k
R605 10k
IC604 PST572C
IC605 GP1U52X
R607 47k
R609 4.7k : UB,
10k : EXCEPT
R610 10k
D611 1SS119
Q601 UN4213-TA
Q602 UN4213
I/O BUFFER
L604 47µH
IC602 CAT35C202P
CS VCC
CLK BSY
DI ORG
DO GND
IC602
<SW.9V>
<UNSW.5V>
<SW.5V>
<UNSW.5V>
R630 10k
EDIT MONITOR
AUTO TRACKING
VIDEO INSERT
AUDIO INSERT
D617 SLR-34DC3
D618 SLR-34MC3
D619 SLR-34VC3
D620 SLR-34VC3
R617 82
R618 150
R619 220
R620 220
D613 1SS119
D614 1SS119
D615 1SS119
Q603 UN4211-TA
Q604 UN4211-TA
Q605 UN4211-TA
Q606 UN4211-TA
LED DRIVE
BZ601
16

*

	JW601	JW602	JW603	R655	R654	R653	JW620	JW621
UB	○	○	○					
AEP	○	○				○		
VC	○		○		○		○	○
NC	○				○	○		
NP		○		○		○		
B						○		

○ : MOUNT

MC-Service


IC601
DISPLAY CONTROL/
SWITCH INTERFACE
IC601
MB89796B-VSX1760
G10
G11
G12
G13
CRT IN LED
T REC LED
PLAY LED
SO (SI BUS)
SI (SO BUS)
S CLK
NTSC PB
COSMO RST
SIRCS OUT
COSMO CS
OSD CS
SDA
SCL
GND
A VDD
ADD
AD1
AD2
AD3
AD4
AD5
AD6
AD7 (AFT)
C OUT (BUZZER)
VDD
CLO
CLI
MOD
X0
X1
GND
RESET
M.CS
M.CLK
M.DATA
M.BUSY
SET RANK 0
SET RANK 1
SET RANK 2
REC
A INS
V INS
SYNC EDIT
EDIT STDBY
PAUSE
REMOTE
A.T
E.M
JOG 0
VPS RESET
PWR FAIL
SYNC PULSE
JOG 1
H DET
SIRCS IN
LANC IN
LANC OUT
VPS CS
POWER ON
STD/NICAM
PAL/SECAM
BG/I L
C+DET
BAND L
LATCH
CLK
DATA
32KHz
8MHz
X601 32.768K
X602 8MHz
C608 68p
CV601 30p
C611 1 50V
C612 0.01
R623 10k
R624 10k
R625 10k
R626 10k
R627 10k
R628 10k
R629 10k
R699 47k
R622 100
C614 0.01
D616 RD6.2ES-T2B
C613 0.022 F
R653 47k
R654 47k
R655 47k
JW601
JW602
JW603
R607 47k
IC604 PST572C
R604 100k
R605 10k
C609 100 10V
D603 1SS119
D604 1SS119
D605 1SS119
L607 220μH
JW612
IC605 GP1U52X
C607 0.01
R609 4.7k : UB, B 10k : EXCEPT UB, B
R610 10k
D611 1SS119
D610 1SS119
Q601 UN4213-TA
Q602 UN4213-TA
I/O BUFFER
L604 47μH
IC602 CAT35C202P
CS
CLK
DI
DO
VCC
BSY
ORG
GND
RV603
RV601 20k
RV604
RV602 20k
LEVEL VOL (L)
LEVEL VOL (R)
LEVEL VOL (L) ADJ
LEVEL VOL (R) ADJ
10k : UB, B 4.7k : EXCEPT UB, B
R662 1k
R664 1k
R670 4700
R671 4700
L609 2.2μH
L610 2.2μH
D612 1SS119
JW605
JW606
JW620
JW621
JW618
JW604
R608 10k
VC MODEL
11 POWER ON
12 LEVEL VR Vcc
13 BAND L
14 PAL/SECAM
15 LEVEL VR (R)
16 LEVEL VR (L)
17 HP LEVEL
18 SW GND
19 BACK UP 5V
20 SYNC PULSE
(See page 112)
CN602 24P
1 PLL ENABLE
2 PLL DATA
3 PLL CLK
4 AFT
5 SIRCS IN
6 SIRCS OUT
7 OSD CS
8 SCL
9 SDA
10 BG/IL
11 STD/NICAM
12 SO BUS
13 SI BUS
14 S CLK
15 VPS CS/MESECAM
16 VPS RESET/SECAM
17 SW 5V
18 COSMO CS
19 COSMO RST
20 SHARPNESS
21 H DET
22 C+DET
23 MIC SW
24 SW 9V
TO MA-140 BOARD CN905 (See page 112)
CN603 12P
12 N.C.
11 N.C.
10 REMOTE LED
9 VPS LED
8 A/D 0
7 A/D 1
6 A/D 2
5 A/D 3
4 EDIT STBY LED
3 SYNC EDIT LED
2 TIMER REC LED
1 UNSW GND
TO TK-17 BOARD CN150 (See page 134.)
Q608 UN4211-TA
LED DRIVE
IC602 ROM
(SW.9V)
(UNSW.5V)
(SW.5V)
R630 10k
EDIT MONITOR
AUTO TRACKING
VIDEO INSERT
AUDIO INSERT
D617 SLR-34DC3
D618 SLR-34MC3
D619 SLR-34VC3
D620 SLR-34VC3
R617 82
R618 150
R619 220
R620 220
D613 1SS119
D614 1SS119
D615 1SS119
Q603 UN4211-TA
Q604 UN4211-TA
Q605 UN4211-TA
Q606 UN4211-TA
LED DRIVE
BZ601
❶
❷

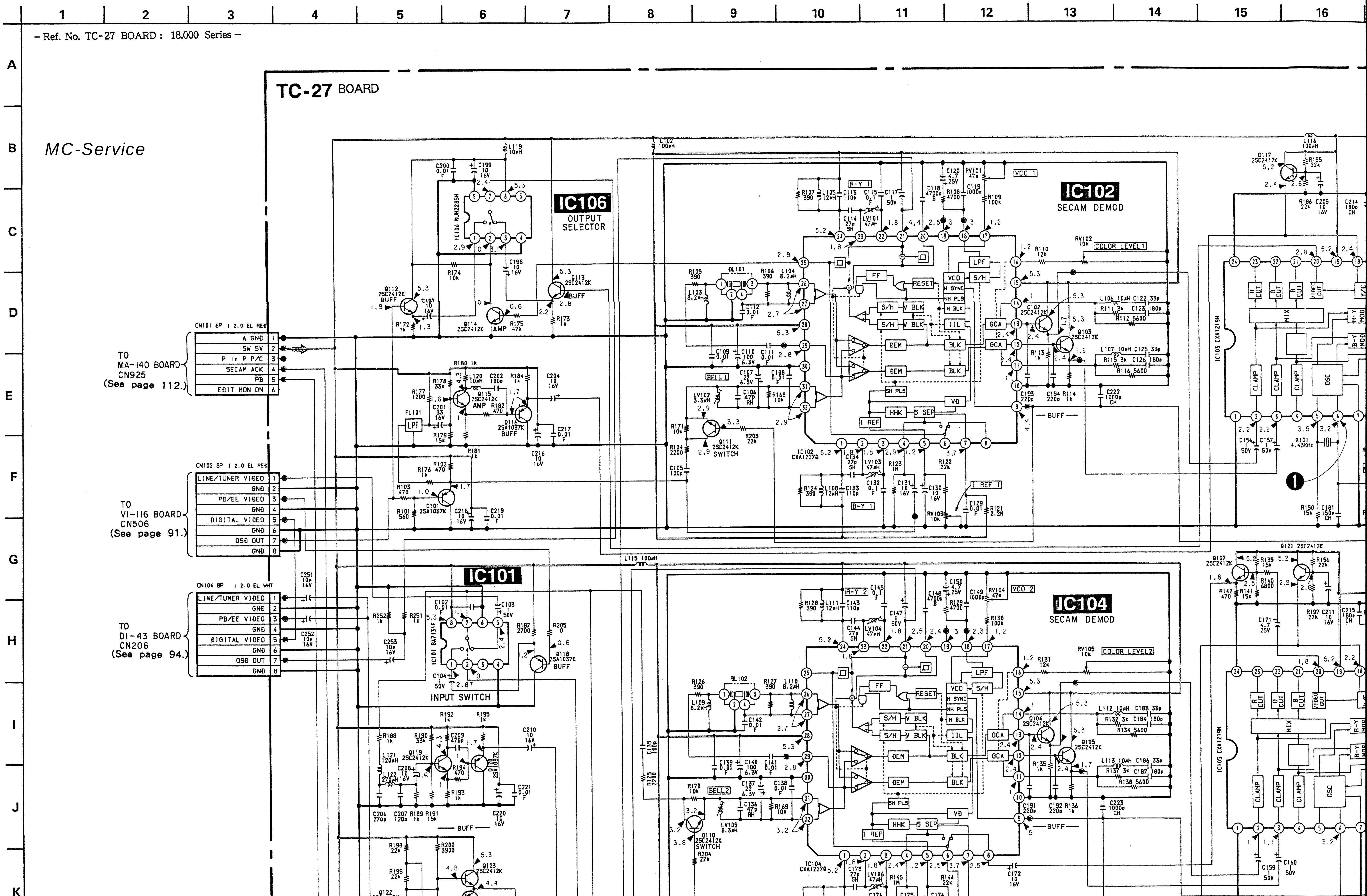
*

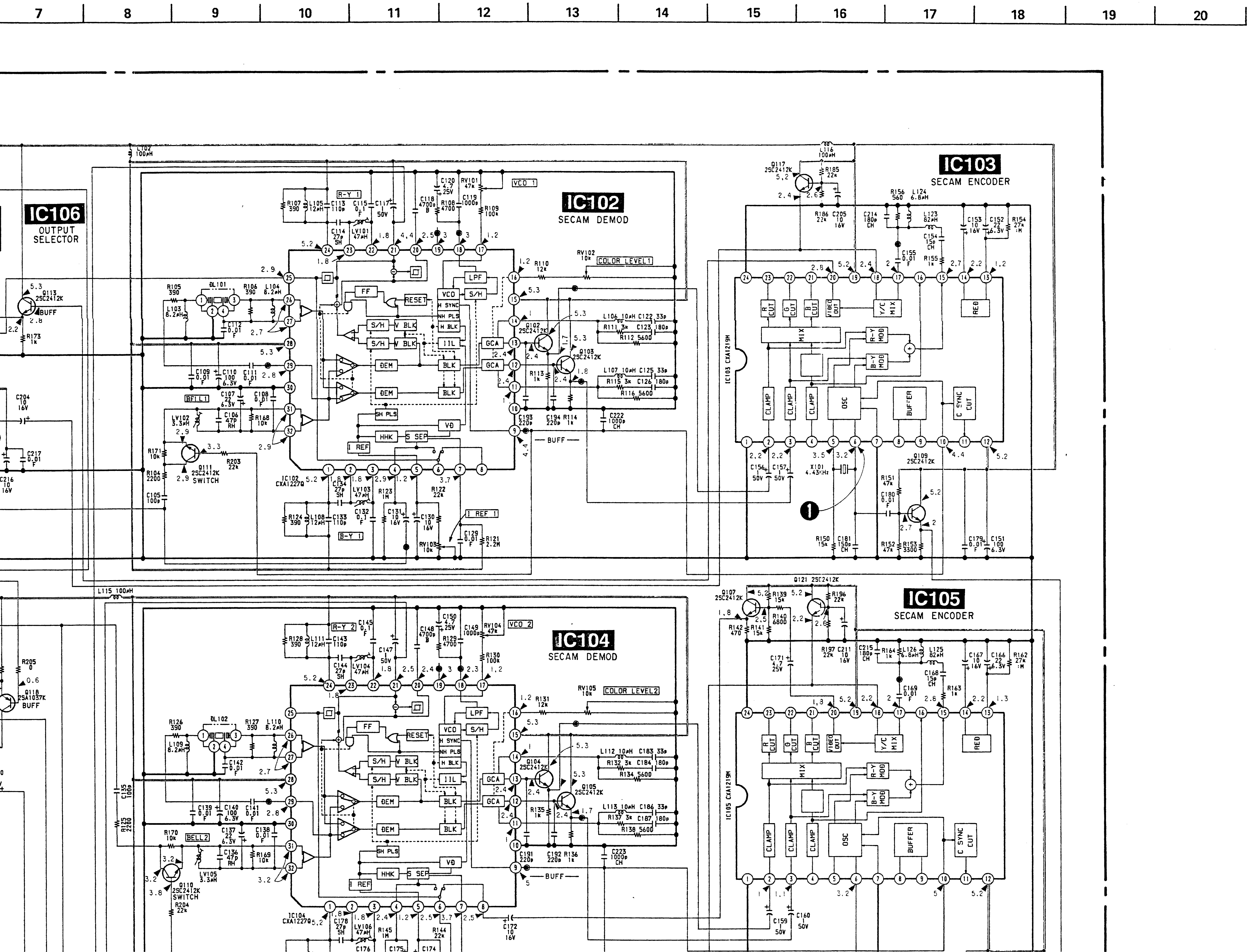
	JW601	JW602	JW603	R655	R654	R653	JW620	JW621
UB	○	○	○					
AEP	○	○				○		
VC	○		○		○		○	○
NC	○				○	○		
NP		○		○		○		
B						○		

○ : MOUNT

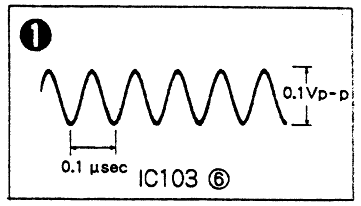
TC-27 (TRANSCODER) SCHEMATIC DIAGRAM (B Model)

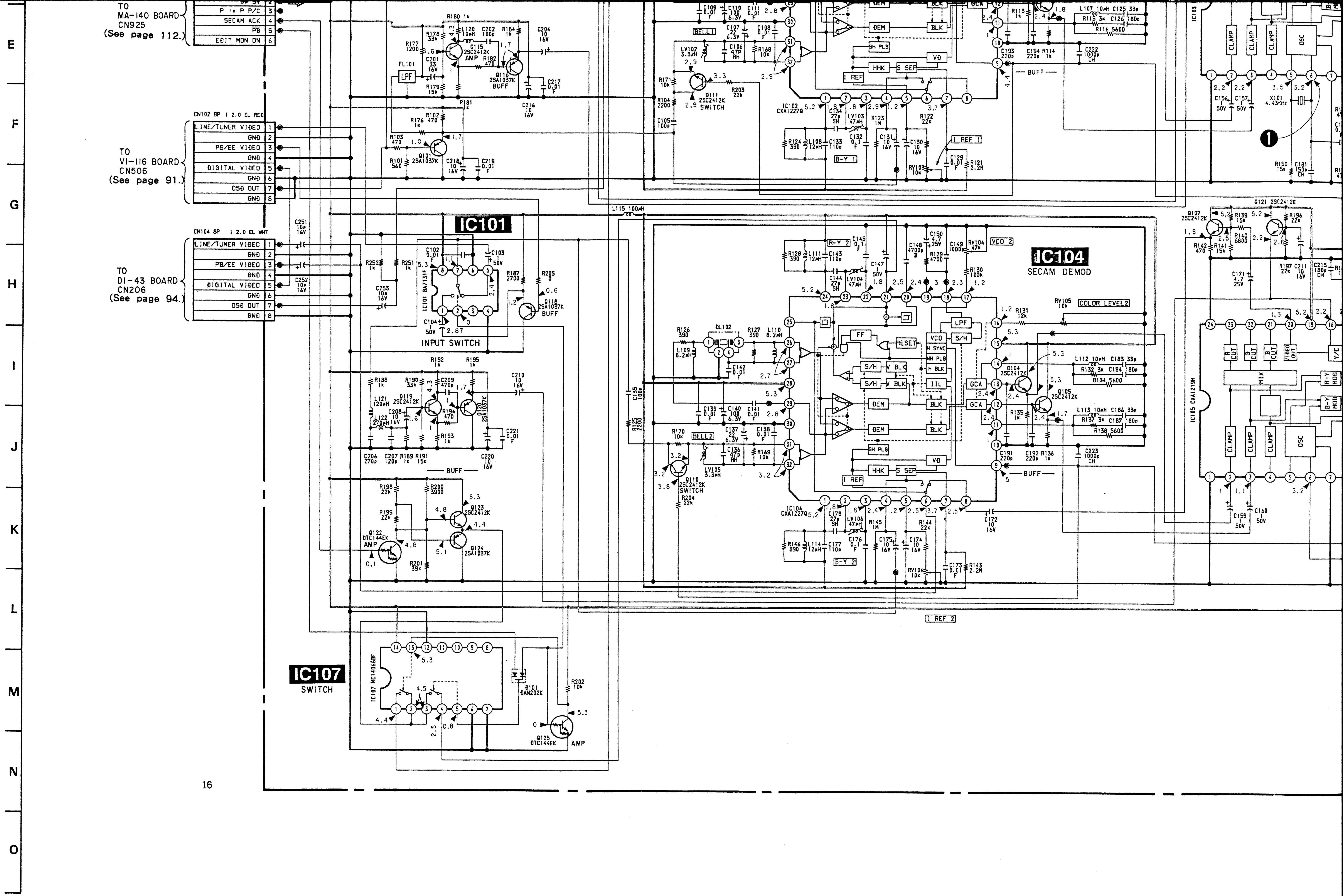
– Ref. No. TC-27 BOARD : 18,000 Series –


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
K
TC-27 BOARD
IC106
OUTPUT SELECTOR
IC106 NJM2235M
IC102
SECAM DEMOD
IC102 CXA1227Q
IC103 CXA1219M
IC101
INPUT SWITCH
IC101 BA7131F
IC104
SECAM DEMOD
IC104 CXA1227Q
IC105 CXA1219M
CN101 6P I 2.0 EL RED
A GND
SW 5V
P in P P/C
SECAM ACK
PB
EDIT MON ON
TO MA-140 BOARD CN925 (See page 112.)
CN102 8P I 2.0 EL RED
LINE/TUNER VIDEO
GND
PB/EE VIDEO
GND
DIGITAL VIDEO
GND
OSD OUT
GND
TO VI-116 BOARD CN506 (See page 91.)
CN104 8P I 2.0 EL WHT
LINE/TUNER VIDEO
GND
PB/EE VIDEO
GND
DIGITAL VIDEO
GND
OSD OUT
GND
TO DI-43 BOARD CN206 (See page 94.)
Q112 2SC2412K BUFF
Q113 2SC2412K BUFF
Q114 2SC2412K AMP
Q115 2SC2412K AMP
Q116 2SA1037K BUFF
Q101 2SA1037K
Q111 2SC2412K SWITCH
Q102 2SC2412K
Q103 2SC2412K
Q117 2SC2412K
Q107 2SC2412K
Q121 2SC2412K
Q118 2SA1037K BUFF
Q119 2SC2412K
Q104 2SC2412K
Q105 2SC2412K
Q110 2SC2412K SWITCH
Q123 2SC2412K
FL101 LPF
DL101
DL102
BELL1
BELL2
R-Y 1
B-Y 1
R-Y 2
VCO 1
VCO 2
COLOR LEVEL1
COLOR LEVEL2
I REF 1
FF
RESET
VCO
H SYNC
NH PLS
H BLK
S/H
V BLK
LPF
GCA
DEM
BLK
IIL
SH PLS
HHK
S SEP
VD
I REF
BUFF
R CUT
G CUT
B CUT
VIDEO OUT
MIX
R-Y MOD
B-Y MOD
CLAMP
OSC
X101 4.43MHz
L115 100μH
L102 100μH
L116 100μH
L119 10μH
❶


7
8
9
10
11
12
13
14
15
16
17
18
19
20
IC106
OUTPUT SELECTOR
Q113 2SC2412K BUFF
Q118 2SA1037K BUFF
IC102
SECAM DEMOD
IC102 CXA1227Q
Q111 2SC2412K SWITCH
Q102 2SC2412K
Q103 2SC2412K
BELL1
VCO 1
COLOR LEVEL1
R-Y 1
B-Y 1
I REF 1
BUFF
IC103
SECAM ENCODER
IC103 CXA1219M
Q117 2SC2412K
Q109 2SC2412K
X101 4.43MHz
IC104
SECAM DEMOD
IC104 CXA1227Q
Q110 2SC2412K SWITCH
Q104 2SC2412K
Q105 2SC2412K
BELL2
VCO 2
COLOR LEVEL2
R-Y 2
IC105
SECAM ENCODER
IC105 CXA1219M
Q107 2SC2412K
Q121 2SC2412K
FF
RESET
VCO
S/H
LPF
H SYNC
NH PLS
H BLK
V BLK
11L
GCA
DEM
BLK
SH PLS
HHK
S SEP
VD
I REF
R CUT
G CUT
B CUT
VIDEO OUT
Y/C MIX
RED
MIX
R-Y MOD
B-Y MOD
CLAMP
OSC
BUFFER
C SYNC CUT
L115 100µH
C102 100µH
❶

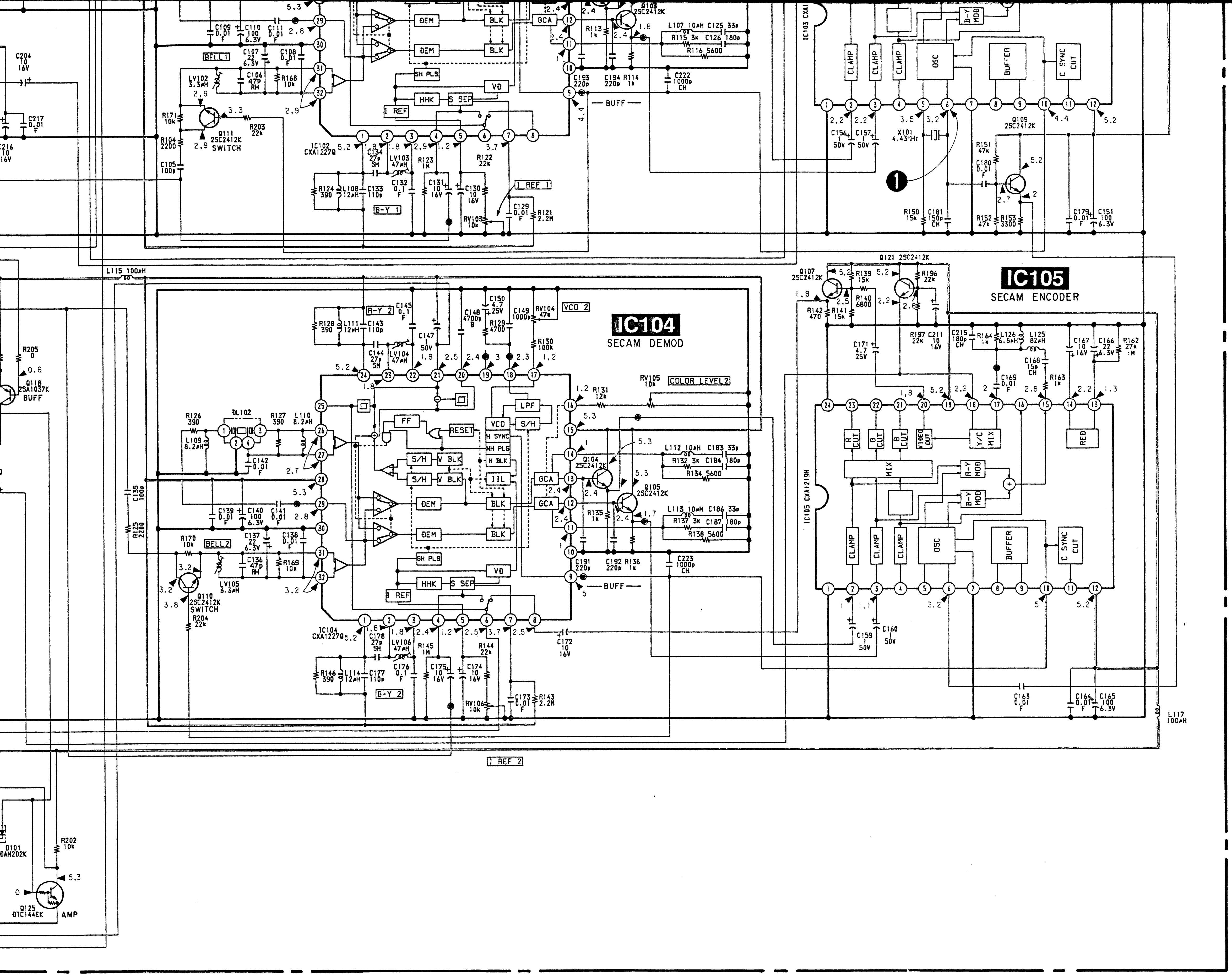
TC-27 BOARD


❶
0.1Vp-p
0.1 µsec
IC103 ⑥

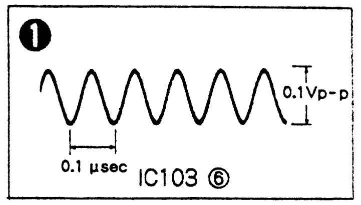

E
F
G
H
I
J
K
L
M
N
O
TO MA-140 BOARD CN925 (See page 112.)
P in P P/C
SECAM ACK
PB
EDIT MON ON
CN102 8P I 2.0 EL RED
LINE/TUNER VIDEO
GND
PB/EE VIDEO
GND
DIGITAL VIDEO
GND
OSD OUT
GND
TO VI-116 BOARD CN506 (See page 91.)
CN104 8P I 2.0 EL WHT
TO DI-43 BOARD CN206 (See page 94.)
IC101
IC101 BA7131F
INPUT SWITCH
Q101 2SA1037K
Q115 2SC2412K AMP
Q116 2SA1037K BUFF
FL101 LPF
Q118 2SA1037K BUFF
Q119 2SC2412K
Q120 2SA1037K
BUFF
Q122 DTC144EK AMP
Q123 2SC2412K
Q124 2SA1037K
IC107
SWITCH
IC107 MC14066BF
D101 DAN202K
Q125 DTC144EK AMP
Q111 2SC2412K SWITCH
IC102 CXA1227Q
BELL1
B-Y 1
I REF 1
R-Y 2
VCO 2
IC104
SECAM DEMOD
COLOR LEVEL2
BELL2
Q110 2SC2412K SWITCH
IC104 CXA1227Q
B-Y 2
I REF 2
L115 100µH
Q104 2SC2412K
Q105 2SC2412K
FF
RESET
VCO
S/H
LPF
H SYNC
NH PLS
H BLK
IIL
GCA
DEM
BLK
SH PLS
HHK
S SEP
VD
I REF
BUFF
IC103
IC105 CXA1219M
CLAMP
OSC
X101 4.43MHz
R CUT
G CUT
B CUT
VIDEO OUT
MIX
R-Y MOD
B-Y MOD
Y/C
Q107 2SC2412K
Q121 2SC2412K
16

MC-Service

R 210	1-215-425-00	1.5K	
R 211	FOR ADJUSTMENT		
R 212	〃		
R 213	〃		
R 214	1-249-429-11	10K 1/4W	
R 215	1-219-149-11	FUSE RESISTOR 1 Ω 1/4W	
R 216	1-219-112-11	〃 10 Ω 1/4W	
R 217	〃	〃	
D 101	8-719-510-06	S1WA60	
D 102	8-719-304-63	RM11C	(ORIGINAL ERA15-06)
D 103	8-719-948-45	ERA22-08	
D 104	8-719-200-02	10E-2	
D 105	8-719-912-20	ISS120	(ORIGINAL MA165)
D 106	8-719-109-63	RD3.0ES-B2	
Q 101	8-729-204-94	2SC3559	(ORIGINAL 2SC4231)
Q 102	8-729-265-52	2SC2655	(〃 2SC3377)
PC 101	9-903-923-01	CN3171	
Q 201	8-729-140-93	2SB733-34	
D 201	8-719-313-16	AU02A	(ORIGINAL ERA18-02)
D 202	8-719-114-82	RD16JSB1	
D 203	8-719-920-67	ERC91-02	
D 204	〃	〃	
D 205	8-719-981-00	ERC81-004	
D 206	〃	〃	
D 207	8-719-313-16	AU02A	
D 208	8-719-980-78	ERA83-006	(ORIGINAL ERA83-004)
D 209	8-719-110-88	RD39ES-B	(〃 MA4390)
SCR 201	8-719-104-17	2P5M	(ORIGINAL 2P4M 500V →600V)
IC 201	NOTHING	PQ12RF13	(PQ12RF11 9-902-066-01)
IC 202	8-759-632-07	M5237L	
IC 203	9-902-066-01	PQ12RF11	
IC 204	8-749-920-43	SI3050CA	(SI-3050CA)
IC 205	8-759-420-19	AN1431T	(ORIGANAL HA17431P)
L 181	1-421-915-11	CHALK COIL	
L 201	9-998-937-01	〃 10 μF	
AC INLET	1-540-054-11	AC INLET	
T 101	NO SUBSTITUTION (SWITCHING TRANSE)		


IC104
SECAM DEMOD
IC105
SECAM ENCODER
IC102 CXA1227Q
IC104 CXA1227Q
IC105 CXA1219M
IC103 CXA1
DEM
BLK
GCA
VCO
S/H
LPF
FF
RESET
H SYNC
NH PLS
H BLK
V BLK
IIL
SH PLS
HHK
S SEP
VD
I REF
BUFF
CLAMP
OSC
BUFFER
C SYNC CUT
R CUT
G CUT
B CUT
VIDEO OUT
Y/C MIX
MIX
R-Y MOD
B-Y MOD
RED
BELL1
BELL2
R-Y 2
B-Y 1
B-Y 2
VCO 2
COLOR LEVEL2
I REF 1
I REF 2
Q103 2SC2412K
Q104 2SC2412K
Q105 2SC2412K
Q107 2SC2412K
Q109 2SC2412K
Q110 2SC2412K SWITCH
Q111 2SC2412K SWITCH
Q118 2SA1037K BUFF
Q121 2SC2412K
Q125 DTC144EK AMP
D101 DAN202K
DL102
X101 4.43MHz
L115 100μH
L117 100μH
RV103 10k
RV104 47k
RV105 10k
RV106 10k

TC-27 BOARD



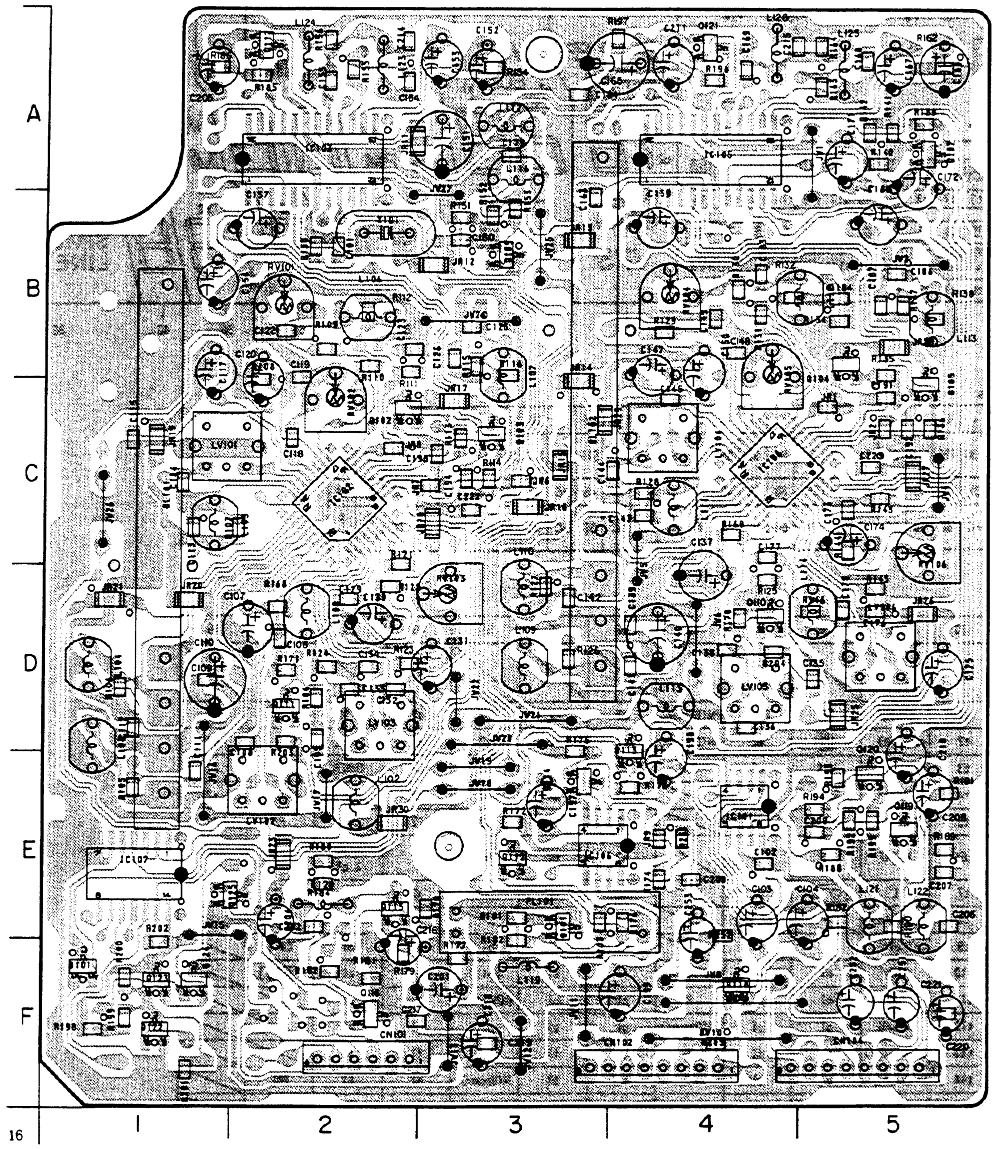
MC-Service

TC-27 (TRANSCODER) PRINTED WIRING BOARD (B Model)

— Ref. No. TC-27 BOARD : 18,000 Series —

TC-27 BOARD

TC-27 BOARD	
D101	F-1
IC101	E-4
IC102	C-2
IC103	A-2
IC104	C-4
IC105	B-4
IC106	E-4
IC107	E-1
Q101	F-3
Q102	C-2
Q103	C-3
Q104	B-5
Q105	B-5
Q107	A-5
Q109	B-3
Q110	D-4
Q111	D-2
Q112	E-3
Q113	E-4
Q114	E-3
Q115	E-2
Q116	F-2
Q117	A-2
Q118	F-4
Q119	E-5
Q120	E-5
Q121	A-4
Q122	F-1
Q123	F-1
Q124	F-1
Q125	E-2


A
B
C
D
E
F
1
2
3
4
5
16
IC107
IC102
CN101

DIODE

D101	8-719-400-18	MA152WK

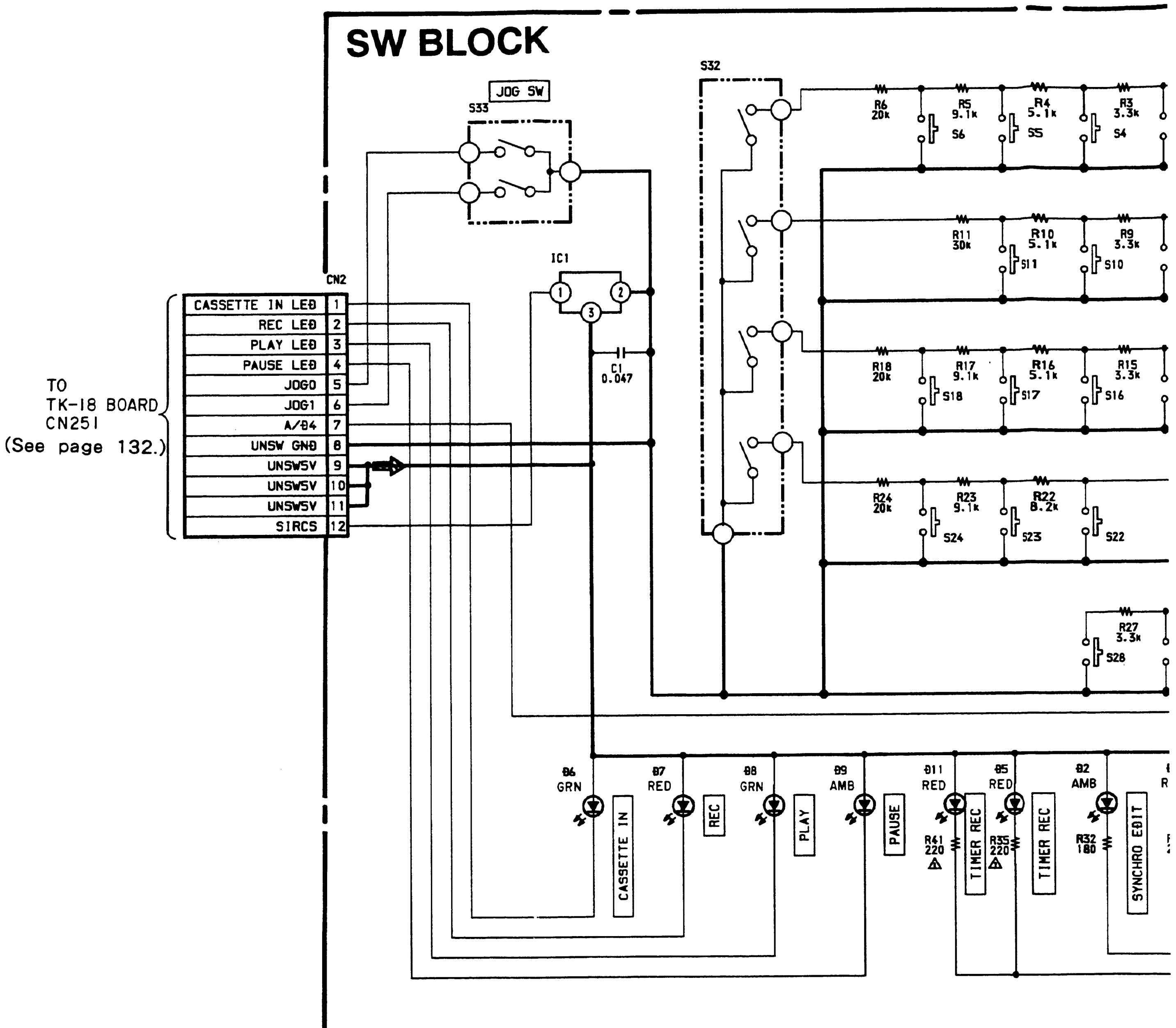
IC

IC101	8-759-941-68	BA7131F
IC102	8-752-035-00	CXA1227Q
IC103	8-752-034-04	CXA1219M
IC104	8-752-035-00	CXA1227Q
IC105	8-752-034-04	CXA1219M
IC106	8-759-710-29	NJM2235M
IC107	8-759-008-67	MC14066BF

TRANSISTOR

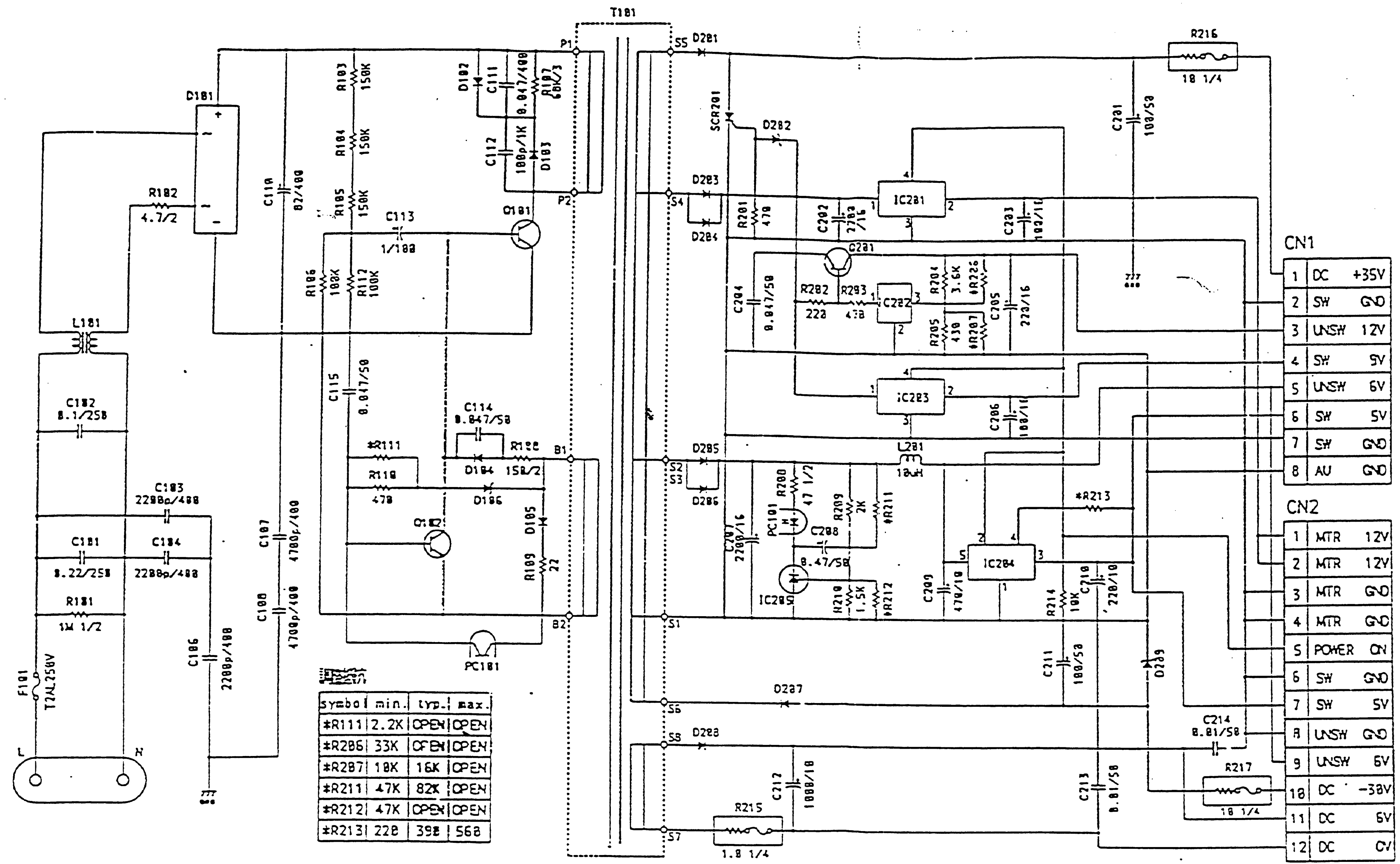
Q101	8-729-216-22	2SA1162
Q102	8-729-920-74	2SC2412K-QR
Q103	8-729-920-74	2SC2412K-QR
Q104	8-729-920-74	2SC2412K-QR
Q105	8-729-920-74	2SC2412K-QR
Q107	8-729-920-74	2SC2412K-QR
Q109	8-729-920-74	2SC2412K-QR
Q110	8-729-920-74	2SC2412K-QR
Q111	8-729-920-74	2SC2412K-QR
Q112	8-729-920-74	2SC2412K-QR
Q113	8-729-920-74	2SC2412K-QR
Q114	8-729-920-74	2SC2412K-QR
Q115	8-729-920-74	2SC2412K-QR
Q116	8-729-216-22	2SA1162
Q117	8-729-920-74	2SC2412K-QR
Q118	8-729-216-22	2SA1162
Q119	8-729-920-74	2SC2412K-QR
Q120	8-729-216-22	2SA1162
Q121	8-729-920-74	2SC2412K-QR
Q122	8-729-901-01	DTC144EK
Q123	8-729-920-74	2SC2412K-QR
Q124	8-729-216-22	2SA1162
Q125	8-729-901-01	DTC144EK

SWITCH BLOCK


SW BLOCK
JOG SW
S33
S32
IC1
1
2
3
C1
0.047
CN2
TO
TK-18 BOARD
CN251
(See page 132.)
CASSETTE IN LED 1
REC LED 2
PLAY LED 3
PAUSE LED 4
JOG0 5
JOG1 6
A/D4 7
UNSW GND 8
UNSW5V 9
UNSW5V 10
UNSW5V 11
SIRCS 12
R6 20k
R5 9.1k
R4 5.1k
R3 3.3k
S6
S5
S4
R11 30k
R10 5.1k
R9 3.3k
S11
S10
R18 20k
R17 9.1k
R16 5.1k
R15 3.3k
S18
S17
S16
R24 20k
R23 9.1k
R22 8.2k
S24
S23
S22
R27 3.3k
S28
D6 GRN
CASSETTE IN
D7 RED
REC
D8 GRN
PLAY
D9 AMB
PAUSE
D11 RED
R41 220
TIMER REC
D5 RED
R35 220
TIMER REC
D2 AMB
R32 180
SYNCHRO EDIT

A/D0	S1	S2	S3	S4	S5	S6	SA
	EJECT	STOP	PLAY	REC	EDIT STAND-BY	SYNCHRO EDIT	SHUTTLE A
A/D1	S7	S8	S9	S10	S11	S12	SB
	EDIT MONITOR	H.S. REW	FF	REW	PAUSE		SHUTTLE B
A/D2	S13	S14	S15	S16	S17	S18	SC
	INPUT SELECT	TAPE SPEED	EDIT ON/OFF	TIMER REC	QUICK TIMER	TV/VTR	SHUTTLE C
A/D3	S19	S20	S21	S22	S23	S24	SD
	CH+	CH-		REMOTE	AUTO TRACKING	MANUAL TRACK+	SHUTTLE D
A/D4	S25	S26	S27	S28	S29	S30	S31
		VPS ON/OFF	COUNTER RESET	MANUAL TRACK-			

16


T101
P1
P2
B1
B2
S1
S2
S3
S4
S5
S6
S7
S8
D101
R102 4.7/2
L101
C102 0.1/250
C103 2200p/400
C101 0.22/250
C104 2200p/400
R101 1M 1/2
F101 T2AL250V
C106 2200p/400
C110 82/400
C107 4700p/400
C108 4700p/400
R103 150K
R104 150K
R105 150K
C113 1/100
Q101
R106 100K
R112 100K
C115 0.047/50
C114 0.047/50
*R111
R110 470
R108 150/2
D104
D106
Q102
D105
R109 22
PC101
D102
C111
C112 100p/1K
D103
R107 68K/3
D201
SCR201
D202
D203
D204
R201 470
C202 270/16
IC201
C203 100/16
C201 100/50
R216 10 1/4
Q201
C204 0.047/50
R202 220
R203 470
IC202
R204 3.6K
*R206
R205 430
*R207
C205 220/16
IC203
C206 100/16
D205
D206
L201 10uH
PC101
R208 47 1/2
R209 2K
*R211
C207 2200/16
C208 0.47/50
IC205
R210 1.5K
*R212
C209 470/10
IC204
*R213
R214 10K
C210 220/10
C211 100/50
D209
D207
D208
C214 0.01/50
R217 10 1/4
C212 1000/10
C213 0.01/50
R215 1.0 1/4
CN1
1 DC +35V
2 SW GND
3 UNSW 12V
4 SW 5V
5 UNSW 6V
6 SW 5V
7 SW GND
8 AU GND
CN2
1 MTR 12V
2 MTR 12V
3 MTR GND
4 MTR GND
5 POWER ON
6 SW GND
7 SW 5V
8 UNSW GND
9 UNSW 6V
10 DC -30V
11 DC 6V
12 DC CV
L
N

symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	390	560

D101	S1WBA60
D102	ERA15-06 or ~~AM01A~~
D103	ERA22-08 or EG01C
D104	ERA15-02 or 11ES2
D105	MA165
D106	RD3.0ES or ~~MA4030~~
Q101	2SC4231
Q102	2SC3377
PC101	ON3171
Q201	2SB733 or 2SA934 or 2SB1434
D201, 207	AU02Z or ~~ERA15-02~~
D202	RD15JSB or ~~MA4150~~
D203, 204	S3L20U or ERC91-02 or RL4Z
D205, 206	D3S4M or RK44 or ERC81-004
D208	AK04 or ~~ERA83-004~~
D209	RD39ES or ~~MA4390~~
SCR201	2P4M
IC201	PQ12RF13
IC202	M5237L
IC203	PQ09RF11
IC204	SI-3052CA
IC205	HA17431 or AN1431T

単位	抵抗	Ω/W（指定なき1/4W）
	コンデンサ	μF/V（p表示はpF）

HISTORY ×COUNT	SUFFIX / RCPL	ECN-NO. DATE	REVISION	SIGN.

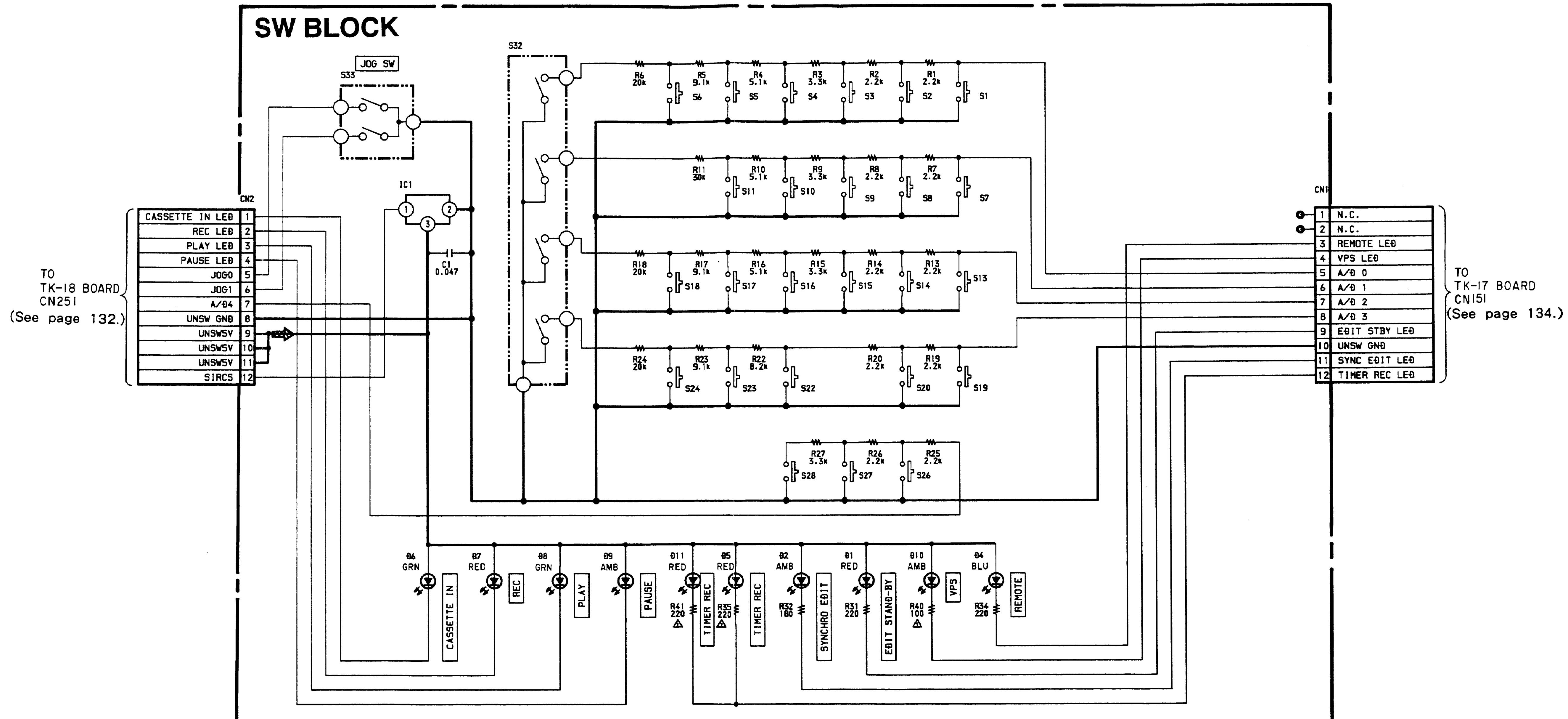
DRAWN BY
PLANNED BY
CHECKED BY
APPROVED BY
TENTATIVE
MODEL VSX-1762
PART NO 0-479-513-01

UNIT mm
ANGLE 3rd
SCALE
TOLERANCE
USED ON
RANK
FAMILY
ORIGINAL MODEL VSX-1762
MATERIAL (COLOR)
FINISH (COLOR)
DESCRIPTION
(E)
(J) SR-427 回路図
PART NO. SB-D1595
1-413-758-11
SHEET 10

ISSUED
REVISED

A3

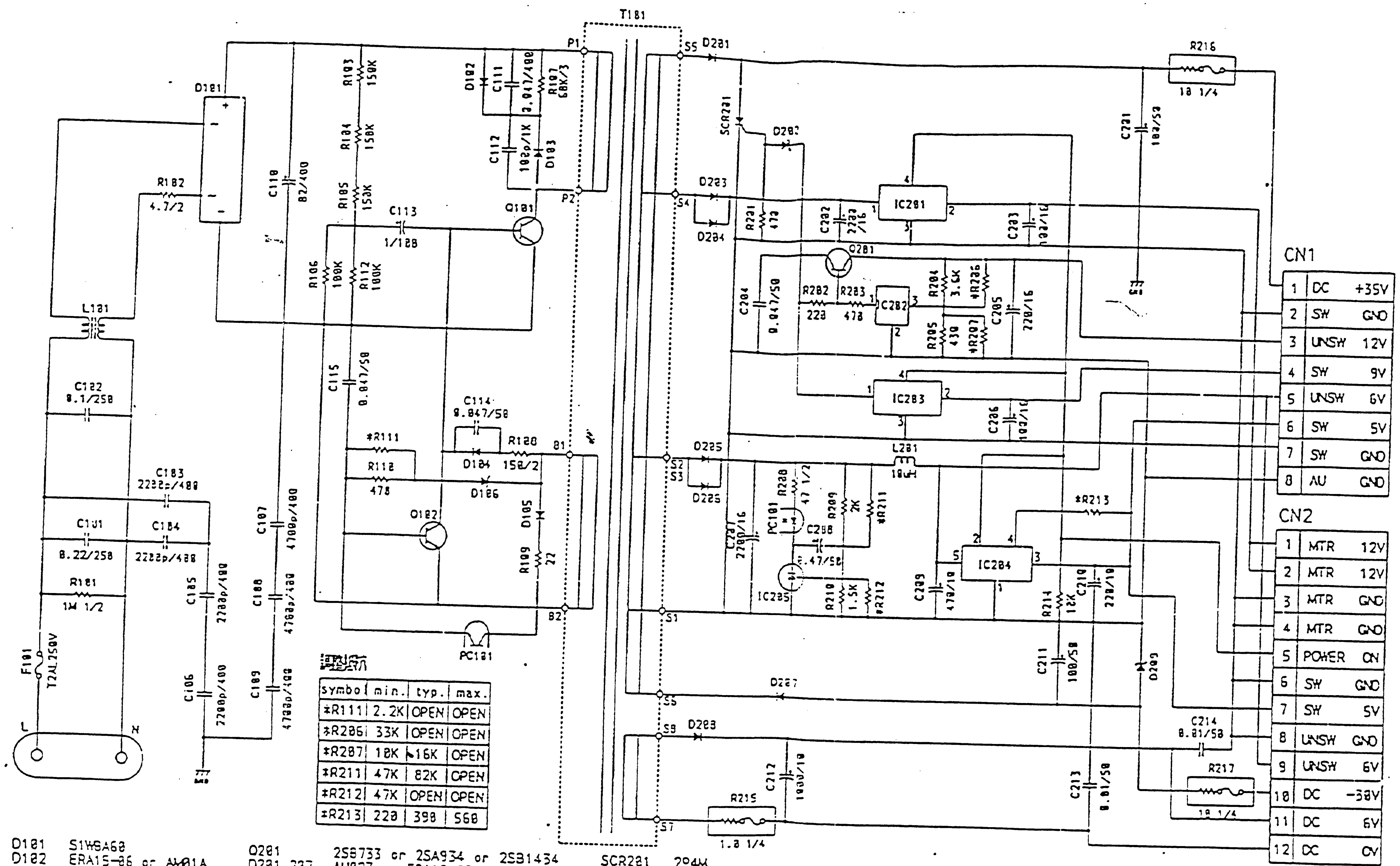
SWITCH BLOCK


SW BLOCK
S32
JOG SW
S33
IC1
C1
0.047
CN2
CASSETTE IN LED 1
REC LED 2
PLAY LED 3
PAUSE LED 4
JOG0 5
JOG1 6
A/D4 7
UNSW GND 8
UNSW5V 9
UNSW5V 10
UNSW5V 11
SIRCS 12
TO
TK-18 BOARD
CN251
(See page 132.)
R6 20k
R5 9.1k
R4 5.1k
R3 3.3k
R2 2.2k
R1 2.2k
S6
S5
S4
S3
S2
S1
R11 30k
R10 5.1k
R9 3.3k
R8 2.2k
R7 2.2k
S11
S10
S9
S8
S7
R18 20k
R17 9.1k
R16 5.1k
R15 3.3k
R14 2.2k
R13 2.2k
S18
S17
S16
S15
S14
S13
R24 20k
R23 9.1k
R22 8.2k
R20 2.2k
R19 2.2k
S24
S23
S22
S20
S19
R27 3.3k
R26 2.2k
R25 2.2k
S28
S27
S26
CN1
1 N.C.
2 N.C.
3 REMOTE LED
4 VPS LED
5 A/D 0
6 A/D 1
7 A/D 2
8 A/D 3
9 EDIT STBY LED
10 UNSW GND
11 SYNC EDIT LED
12 TIMER REC LED
TO
TK-17 BOARD
CN151
(See page 134.)
D6 GRN
CASSETTE IN
D7 RED
REC
D8 GRN
PLAY
D9 AMB
PAUSE
D11 RED
R41 220
TIMER REC
D5 RED
R35 220
TIMER REC
D2 AMB
R32 180
SYNCHRO EDIT
D1 RED
R31 220
EDIT STAND-BY
D10 AMB
R40 100
VPS
D4 BLU
R34 220
REMOTE

	S1	S2	S3	S4	S5	S6	SA
A/D0	EJECT	STOP	PLAY	REC	EDIT STAND-BY	SYNCHRO EDIT	SHUTTLE A
	S7	S8	S9	S10	S11	S12	SB
A/D1	EDIT MONITOR	H.S. REW	FF	REW	PAUSE		SHUTTLE B
	S13	S14	S15	S16	S17	S18	SC
A/D2	INPUT SELECT	TAPE SPEED	EDIT ON/OFF	TIMER REC	QUICK TIMER	TV/VTR	SHUTTLE C
	S19	S20	S21	S22	S23	S24	SD
A/D3	CH+	CH-		REMOTE	AUTO TRACKING	MANUAL TRACK+	SHUTTLE D
	S25	S26	S27	S28	S29	S30	S31
A/D4		VPS ON/OFF	COUNTER RESET	MANUAL TRACK-			

16

SONY


T101
D101
R102 4.7/2
L101
C102 0.1/250
C103 2200p/400
C101 0.22/250
C104 2200p/400
R101 1M 1/2
F101 T2AL250V
C105 2200p/400
C106 2200p/400
C110 82/400
C107 4700p/400
C108 4700p/400
C109 4700p/400
R103 150K
R104 150K
R105 150K
R106 100K
R112 100K
C113 1/100
Q101
D102
C111 0.047/400
R107 68K/3
C112 100p/1K
D103
C115 0.047/50
C114 0.047/50
*R111
R112 470
R108 150/2
D104
D106
D105
R109 22
Q102
PC101
P1
P2
B1
B2
D201
SCR201
D202
D203
D204
R201 470
C202 2200/16
IC201
C203 100/10
Q201
C204 0.047/50
R202 220
R203 470
IC202
R204 3.6K
*R206
C205 220/16
R205 430
*R207
IC203
C206 100/10
D205
D206
L201 10µH
C207 2200/16
R208 47 1/2
PC101
C208 0.47/50
R209 2K
*R211
IC205
R210 1.5K
*R212
C209 470/10
IC204
*R213
R214 12K
C210 220/10
C211 100/50
D209
D207
D208
C212 1000/10
R215 1.0 1/4
C213 0.01/50
C214 0.01/50
R217 10 1/4
R216 10 1/4
C221 100/50
S1 S2 S3 S4 S5 S7 S9
CN1
1 DC +35V
2 SW GND
3 UNSW 12V
4 SW 9V
5 UNSW 6V
6 SW 5V
7 SW GND
8 AU GND
CN2
1 MTR 12V
2 MTR 12V
3 MTR GND
4 MTR GND
5 POWER ON
6 SW GND
7 SW 5V
8 UNSW GND
9 UNSW 6V
10 DC -30V
11 DC 6V
12 DC 0V

symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	390	560

D101	S1WBA60
D102	ERA15-06 or AM01A
D103	ERA22-08 or EG01C
D104	ERA15-02 or 11ES2
D105	MA165
D106	RD3.0ES or MA4030
Q101	2SC4231
Q102	2SC3377
PC101	PS2561

Q201	2SB733 or 2SA934 or 2SB1434
D201, 207	AU02Z or ERA18-02
D202	RD16JSB or MA4160
D203, 204	S3L20U or ERC91-02 or RL4Z
D205, 206	D3S4M or RK44 or ERC81-004
D208	AK04 or ERA83-004
D209	RD39ES or MA4390

SCR201	2P4M
IC201	PQ12RF13
IC202	M5237L
IC203	PQ09RF11
IC204	SI-3050CA
IC205	HA17431 or AN1431T

[illegible]	[illegible]	Ω/W ([illegible] 1/4W)
	[illegible]	µF/V (p [illegible] pF)

MC-Service

HISTORY COUNT | SUFFIX | ECN | R E V I S I O N | SIGN.

DRAWN BY | PLANNED BY | CHECKED BY | APPROVED BY

TENTATIVE

MODEL VSX-1760

PART NO. 0-479-512-01

UNIT mm

ANGLE 3·4

SCALE

TOLERANCE

USED ON

RANK

ORIGINAL MODEL VSX-1760

MATERIAL (COLOR)

FINISH (COLOR)

DESCRIPTION

(E)

(J) S.R-426 回路図

PART NO. SB-D1914

1-413-757-11

SHEET 10

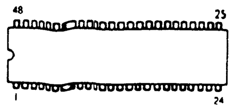
ISSUED

REVISED

A3

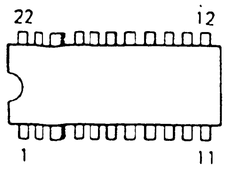
4-3. SEMICONDUCTORS

AN3231K



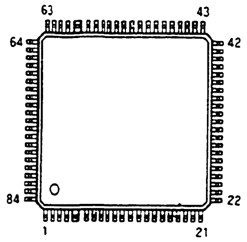
TOP VIEW

AN3327K



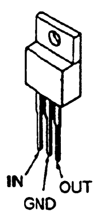
(Top view)

AN3937NFBP

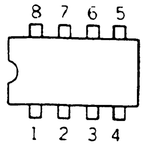

63
43
64
42
84
22
1
21

(TOP VIEW)

BA178M05

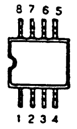


BA4560
CXL5003P
CAT35C202P
MSM6989RS
RC4558P
TL082ACP



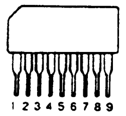
(Top view)

BA4560F
BA4558F
MM1148XFF
MM1149XF
TK15120M

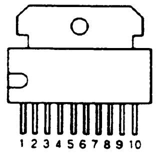


TOP VIEW

BA6138
BA7021
LVA519S
MM1053XS

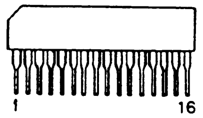


BA6238A

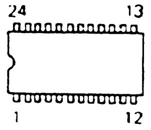

1 2 3 4 5 6 7 8 9 10

Making side view

BA7007

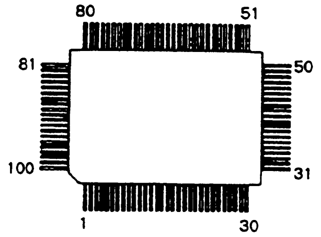


BH7733S
TA8823N

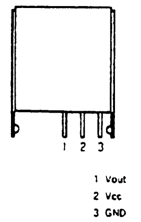


(Top view)

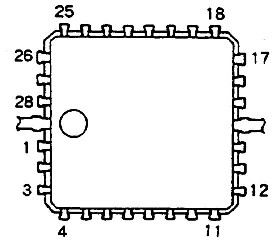
CXP80724-040Q
HD49410
MB89796B-VSX1760
MB89796B-104


80
51
81
50
100
31
1
30

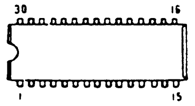
GP1U52X


1 2 3
1 Vout
2 Vcc
3 GND

HA11535MP
HA11567MP
HA118088MP

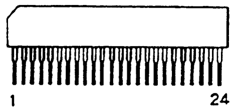

25
18
26
17
28
1
3
12
4
11

HA118162NT
HA118016NT

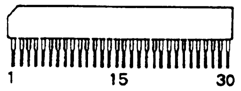


(Top view)

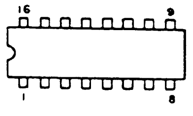
HM53461ZP-12



LA7297

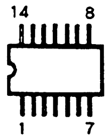


MC14053BCP
TC4053BF



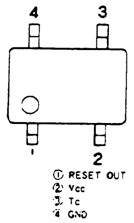
(TOP VIEW)

MC14001BF
MC74HC132AF
SN74HC74ANS

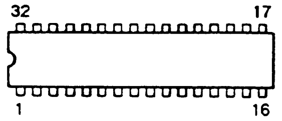


TOP VIEW

AN3916
MM1031XMR

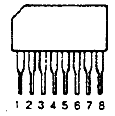

4
3
2
① RESET OUT
② Vcc
③ Tc
④ GND

M50555-VSX1760

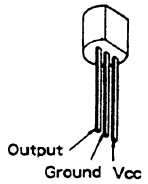


TOP VIEW

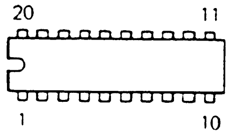
BA7611AN
M5201L



PST572C
PST572H
PST572K-T

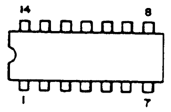

Output
Ground
Vcc

TDA8415



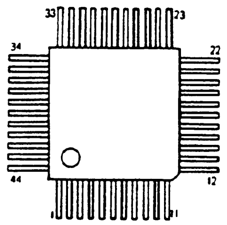
(Top view)

SDA5642
uPC324C

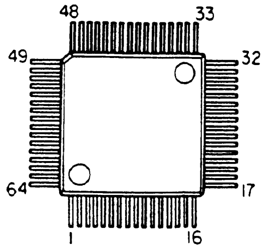


(TOP VIEW)

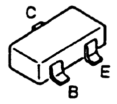
uPD75004GB-VSX182


33
23
34
22
44
12
1

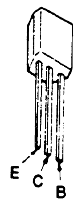
uPD78013GC-VSX1760


48
33
49
32
64
17
1
16

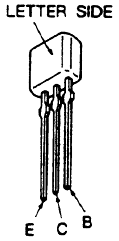
DTA114EK
DTA143EK
DTC114EK
DTC124EK
DTC144EK
UN2113
UN2213
2SA1052-C
2SA1162
2SB709A-R
2SC1623-L5L6
2SC2412K-QR
2SC2712-G
2SC3142-J4
2SD601A-R



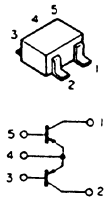
DTA144ES
DTC114ES



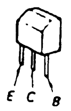
DTC144ES
UN411L
2SA1309A-R
2SC2785-HFE


LETTER SIDE
E
C
B

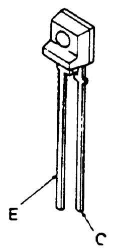
FMS1



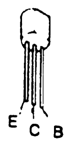
KSA708
KSC1008



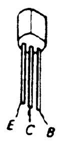
PT483F1S



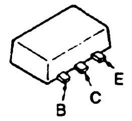
2SC1509



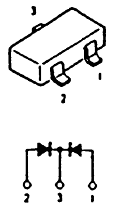
2SD655-E



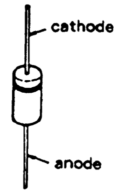
2SB1000A-L
2SD999-CLCK
2SD1005-BV



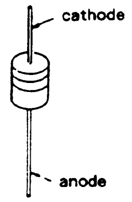
MA152WK



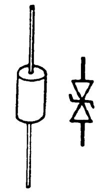
RD13ES-B2


cathode
anode

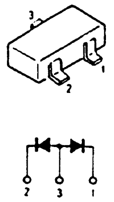
RD33ES-B2
RD33ES-T2B
RD4.3ES-T2B
RD4.7ES-T2B
RD6.2ES-B2
RD6.8ES-B2
RD8.2ES-B2
11ES2
1SS119


cathode
anode

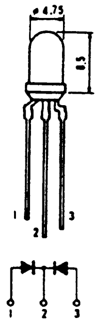
RD9.1E-W



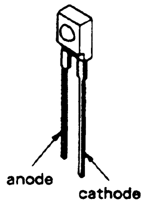
1S2836



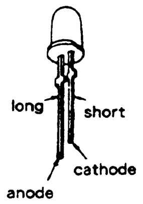
BRPG5014X-K



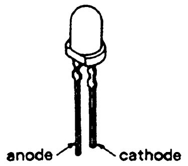
GL451VS1


anode
cathode

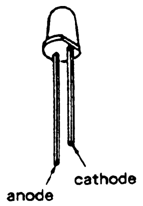
PY5504S-1


long
short
cathode
anode

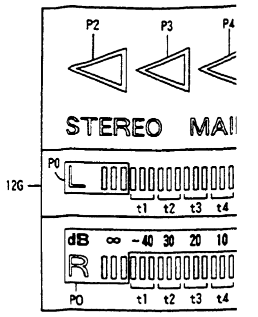
SLR34DC3
SLR-34UC3


anode
cathode

SLR34MC3
SLR34VC3


anode
cathode

4-4. INDIC


P2
P3
P4
STEREO
MAI
12G
P0
L
t1
t2
t3
t4
dB
∞
-40
30
20
10
R
P0
t1
t2
t3
t4

• Interconnection of elect

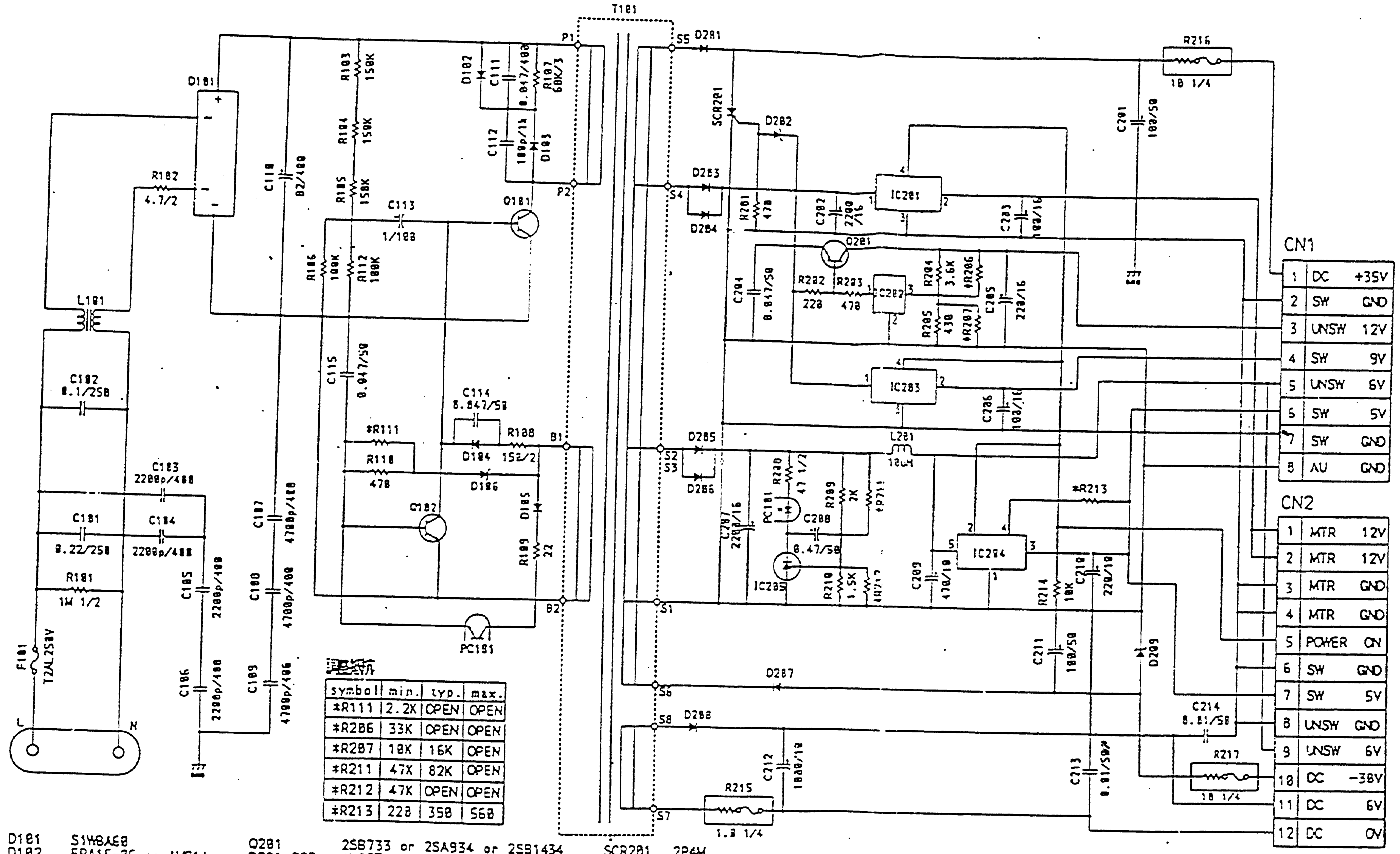
Lead No.	1	2
Interconnected electrodes	F (+)	F (+)
Lead No.	28	29
Interconnected electrodes	NP	NC

• Anode connection

	13G
S0	dB∞ ~+10 RIII
S1	t1
S2	t2
S3	t3
S4	t4
S5	t5
S6	t6
S7	t7
S8	t8
S9	t9
S10	t10
S11	t11
S12	t12
S13	t13
S14	t14
S15	t15
S16	t16

SLV- 725 AEP/B/NC

SONY


T101
D101
R102 4.7/2
L101
C102 0.1/250
C103 2200p/400
C101 0.22/250
C104 2200p/400
R101 1W 1/2
F101 T2AL250V
L
N
C105 2200p/400
C106 2200p/400
C110 82/400
C107 4700p/400
C108 4700p/400
C109 4700p/400
R103 150K
R104 150K
R105 150K
R106 100K
R112 100K
C113 1/100
Q101
C115 0.047/50
C114 0.047/50
*R111
R110 470
R108 150/2
D104
D106
D105
Q102
R109 22
PC101
D102
C111 0.047/400
R107 68K/3
C112 100p/1k
D103
P1
P2
B1
B2
S5 D201
SCR201
D202
D203
S4
D204
R201 470
C202 2200/16
IC201
C203 100/16
Q201
C204 0.047/50
R202 220
R203 470
IC202
R204 3.6K
*R206
R205 430
*R207
C205 220/16
IC203
C206 100/10
S2
S3
D205
D206
L201 10uH
C207 2200/16
PC101
R208 47 1/2
R209 2K
*R211
C208 0.47/50
IC205
R210 1.5K
*R212
C209 470/10
IC204
*R213
R214 10K
C210 220/10
S1
C211 100/50
D209
D207
S6
S8 D208
C212 1000/10
R215 1.0 1/4
S7
C213 0.01/50
C214 0.01/50
R217 10 1/4
R216 10 1/4
C201 100/50
CN1
1 DC +35V
2 SW GND
3 UNSW 12V
4 SW 9V
5 UNSW 6V
6 SW 5V
7 SW GND
8 AU GND
CN2
1 MTR 12V
2 MTR 12V
3 MTR GND
4 MTR GND
5 POWER ON
6 SW GND
7 SW 5V
8 UNSW GND
9 UNSW 6V
10 DC -30V
11 DC 6V
12 DC 0V

選別

symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	350	560

D101	S1WBA60	
D102	ERA15-06 or AM01A	
D103	ERA22-08 or EG01C	
D104	ERA15-02 or 11ES2	
D105	MA165	
D106	RD3.0ES or MA4030	
Q101	2SC4231	
Q102	2SC3377	
PC101	ON3171	
Q201	2SB733 or 2SA934 or 2SB1434	
D201, 207	AU02Z or ERA18-02	
D202	RD16JSB or MA4160	
D203, 204	S3L20U or ERC91-02 or RL4Z	
D205, 206	D3S4M or RK44 or ERC81-004	
D208	AK04 or ERA83-004	
D209	RD39ES or MA4390	
SCR201	2P4M	
IC201	PQ12RF13	
IC202	M5237L	
IC203	PQ09RF11	
IC204	SI-3050CA	
IC205	HA17431 or AN1431T	

単位	抵抗	Ω/W （指定なし1/4W）
	コンデンサ	μF/V （ p 指定はpF ）

SCALE FOR MICROFILM

DRAWING (TYPE D 30)

SONY STANDARD

A3

HISTORY ×COUNT | SUFFIX | ECN-NO. DATE | REVISION | SIGN.

DRAWN BY | PLANNED BY | CHECKED BY | APPROVED BY

TENTATIVE

MODEL VSX-1761

PART NO. 0-479-456-01

UNIT mm

ANGLE 3rd

SCALE

TOLERANCE

USED ON

RANK

FAMILY

ORIGINAL MODEL VSX-1761

MATERIAL (COLOR)

FINISH (COLOR)

DESCRIPTION

(E)

(J) SR-425回路図

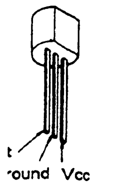
PART NO. SB- D1594 1-413-756-11

SHEET 10

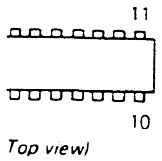
ISSUED

REVISED

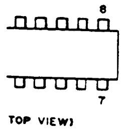
PST572C
PST572H
PST572K-T



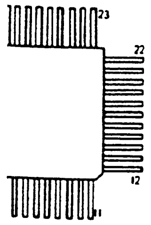
TDA8415


11
10
Top view

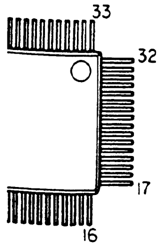
DA5642
PC324C



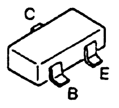
04GB-VSX182



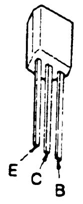
3GC-VSX1760



DTA114EK
DTA143EK
DTC114EK
DTC124EK
DTC144EK
UN2113
UN2213
2SA1052-C
2SA1162
2SB709A-R
2SC1623-L5L6
2SC2412K-QR
2SC2712-G
2SC3142-J4
2SD601A-R

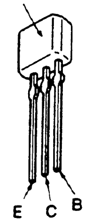


DTA144ES
DTC114ES

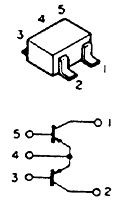


DTC144ES
UN411L
2SA1309A-R
2SC2785-HFE

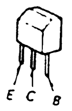
LETTER SIDE



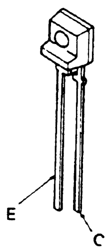
FMS1


5
4
3
2
1
5
4
3
1
2

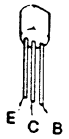
KSA708
KSC1008



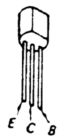
PT483F1S



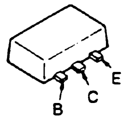
2SC1509



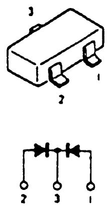
2SD655-E



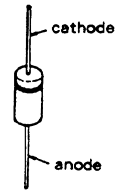
2SB1000A-L
2SD999-CLCK
2SD1005-BV



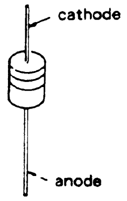
MA152WK



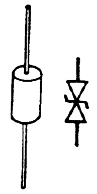
RD13ES-B2


cathode
anode

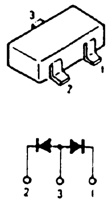
RD33ES-B2
RD33ES-T2B
RD4.3ES-T2B
RD4.7ES-T2B
RD6.2ES-B2
RD6.8ES-B2
RD8.2ES-B2
11ES2
1SS119


cathode
anode

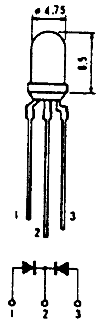
RD9.1E-W



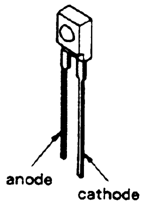
1S2836



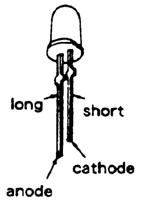
BRPG5014X-K


φ4.75
8.5
1
2
3
1
2
3

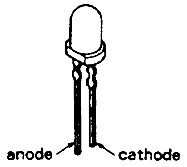
GL451VS1


anode
cathode

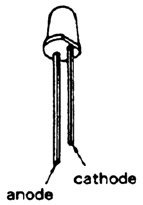
PY5504S-1


long
short
cathode
anode

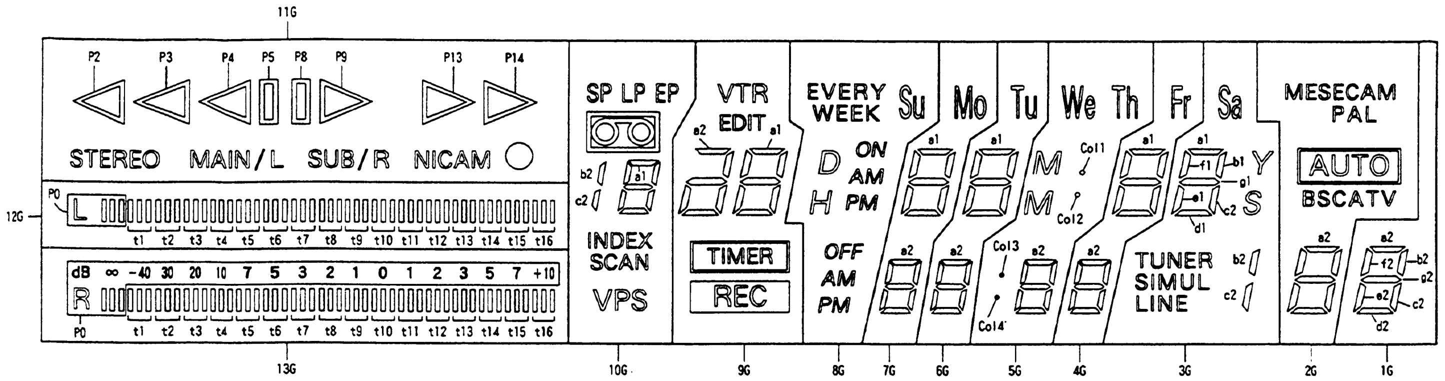
SLR34DC3
SLR-34UC3


anode
cathode

SLR34MC3
SLR34VC3


cathode
anode

4-4. INDICATOR TUBE, FLUORESCENT DESCRIPTION


11G
P2
P3
P4
P5
P8
P9
P13
P14
STEREO
MAIN/L
SUB/R
NICAM
SP LP EP
VTR
EDIT
EVERY WEEK
Su
Mo
Tu
We
Th
Fr
Sa
MESECAM
PAL
AUTO
BSCATV
D
H
ON
AM
PM
OFF
AM
PM
M
M
Col1
Col2
Col3
Col4
Y
S
INDEX
SCAN
VPS
TIMER
REC
TUNER
SIMUL
LINE
12G
P0
L
dB ∞ -40 30 20 10 7 5 3 2 1 0 1 2 3 5 7 +10
R
t1 t2 t3 t4 t5 t6 t7 t8 t9 t10 t11 t12 t13 t14 t15 t16
13G
10G
9G
8G
7G
6G
5G
4G
3G
2G
1G
a1
a2
b1
b2
c1
c2
d1
e1
e2
f1
f2
g2

- Interconnection of electrodes

Lead No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
Interconnected electrodes	F (+)	F (+)	NP	13G	12G	11G	S0	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	S11	S12	S13	S14	S15	S16	10G	NP	NP	9G
Lead No.	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54
Interconnected electrodes	NP	NC	NC	NC	8G	NC	NC	NC	7G	NC	6G	NC	5G	NC	NC	4G	NC	3G	NC	NC	NC	2G	NC	NC	1G	F (-)	F (-)

- Anode connection

	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
S0	dB∞ ~+10 RIII	LIII											
S1	t1	t1	STEREO	LP	EDIT	PM(Bottom)	d2	d2	d2	d2	LINE	d2	d2
S2	t2	t2	◁(Left)	Ib2 Ic2	e2	AM(Bottom)	e2	e2	e2	e2	SIMUL	e2	e2
S3	t3	t3	◁(Center)	VPS	c2	OFF	c2	c2	c2	c2	TUNER	c2	c2
S4	t4	t4	◁(Right)	SCAN	REC		g2	g2	g2	g2		g2	g2
S5	t5	t5	□(Left)	INDEX	TIMER		f2	f2	f2	f2		f2	f2
S6	t6	t6t	MAIN/	SP	b2		b2	b2	b2	b2	I b2 I c2	b2	b2
S7	t7	t7	L	⌷○○⌷	g2		a2	a2	a2	a2	S	a2	a2
S8	t8	t8	□(Right)		a2, d2						Y	BS	
S9	t9	t9	▷(Left)	d1	d1		d1	d1	col 4	d1	d1	CATV	
S10	t10	t10	SUB/	e1	e1	PM(Upper)	e1	e1	col 3	e1	e1	AUTO	
S11	t11	t11	R	c1	c1	H	c1	c1	M(Bottom)	c1	c1		
S12	ti2	t12	NICAM	g1	g1	AM(Upper)	g1	g1	col 2	g1	g1		
S13	t13	t13	▷(Center)	f1	f1	ON	f1	f1	col 1	f1	f1		
S14	t14	t14	▷(Right)	b1	b1	D	b1	b1	M(Upper)	b1	b1	PAL	
S15	t15	t15	○	a1	a1	Su	a1	a1	Th	a1	a1	SECAM	
S16	t16	t16		EP	VTR	EVERY WEEK	Mo	Tu	We	Fr	Sa	ME	

SECTION 5
EXPLODED VIEWS

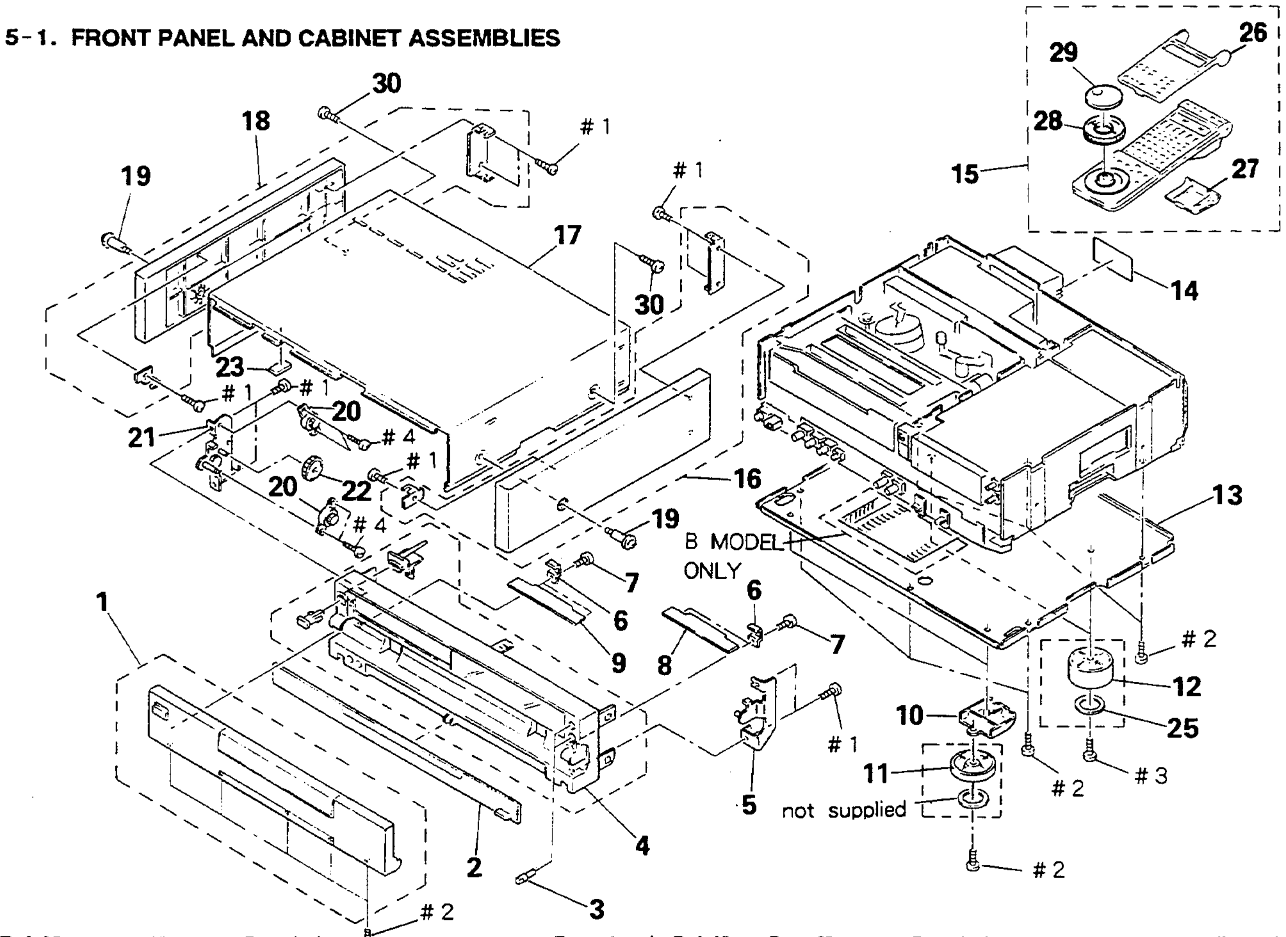
NOTE:

- −XX, −X mean standardized parts, so they may have some differences from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

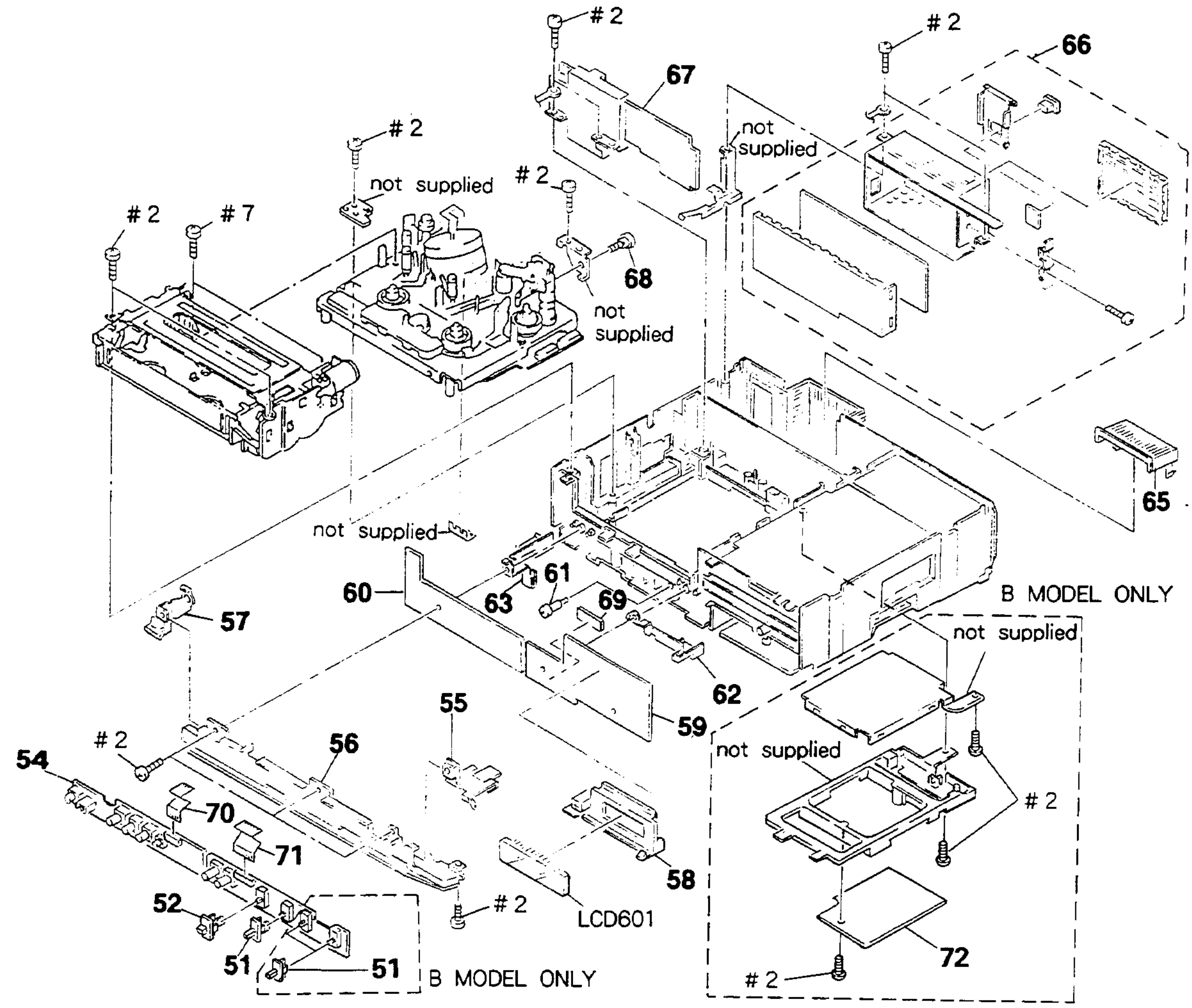
Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spéci-fie.

5-1. FRONT PANEL AND CABINET ASSEMBLIES



Ref. No.	Part No.	Description	Remarks
1	1-466-749-11	SWITCH BLOCK, CONTROL(AEP/B/NC/NP)	
1	1-466-749-21	SWITCH BLOCK, CONTROL(VC)	
1	1-466-749-51	SWITCH BLOCK, CONTROL(UB)	
2	X-3941-675-1	DOOR ASSY (AEP/VC:BLACK)	
2	X-3941-732-1	DOOR ASSY (NC/NP)	
2	X-3942-187-1	DOOR ASSY (VC:GOLD)	
2	X-3941-886-1	DOOR ASSY (B)	
2	X-3941-966-1	DOOR ASSY (UB)	
3	3-948-155-01	KNOB, REC VOL (VC:BLACK)	
3	3-948-155-11	KNOB, REC VOL (VC:GOLD)	
4	X-3941-674-1	PANEL ASSY, FRONT (AEP/VC:BLACK)	
4	X-3941-731-1	PANEL ASSY, FRONT (NC/NP)	
4	X-3941-965-1	PANEL ASSY, FRONT (UB)	
4	X-3942-186-1	PANEL ASSY, FRONT (VC:GOLD)	
4	X-3941-733-1	PANEL ASSY, FRONT (B)	
5	X-3941-677-1	PLATE (R) ASSY, FULCRUM	
* 6	3-743-640-01	RETAINER, PC BOARD	
7	4-921-277-11	SCREW (B2.6X8), TAPPING, BIND	
* 8	1-644-856-11	TK-17 BOARD	
* 9	1-644-857-11	TK-18 BOARD	
10	3-948-122-01	FOOT (BASE)	
11	X-3941-672-1	FOOT ASSY (FRONT) (AEP/B/NC/NP/VC:BLACK)	
11	X-3941-967-1	FOOT ASSY (FRONT) (UB/VC:GOLD)	
12	X-4924-422-1	FOOT ASSY	
* 13	3-944-552-01	PLATE, BOTTOM	
* 13	X-3942-063-1	PLATE ASSY, BOTTOM (B)	
* 14	3-948-032-01	LABEL, MODEL NUMBER (NO. 2) (AEP)	
* 14	3-948-035-01	LABEL, MODEL NUMBER (NO. 2) (B)	
* 14	3-948-033-01	LABEL, MODEL NUMBER (NO. 2) (UB)	
* 14	3-948-034-01	LABEL, MODEL NUMBER (NO. 2) (VC)	
* 14	3-948-036-01	LABEL, MODEL NUMBER (NO. 2) (NC)	
* 14	3-948-037-01	LABEL, MODEL NUMBER (NO. 2) (NP)	
15	1-693-178-11	REMOTE COMMANDER (RMT-V127)	
16	X-3942-161-1	WOOD (R) ASSY, SIDE (VC:GOLD)	
16	X-3941-671-1	PANEL (R) ASSY, SIDE (EXCEPT VC:GOLD)	
* 17	3-944-553-21	COVER, UPPER (VC:GOLD)	
17	3-944-553-01	COVER, UPPER (UB)	
17	3-944-553-11	COVER, UPPER (AEP/B/NC/NP/VC:BLACK)	
18	X-3942-162-1	WOOD (L) ASSY, SIDE (VC:GOLD)	
18	X-3941-673-1	PANEL (L) ASSY, SIDE (EXCEPT VC:GOLD)	
19	3-743-601-01	SCREW, SIDE WOOD	
20	3-712-786-21	DUMPER, OIL	
21	X-3941-676-1	PLATE (L) ASSY, FULCRUM	
22	3-948-151-01	GEAR (B), MIDWAY	
* 23	4-911-047-01	VIBRATION CONTROL (D)	
25	4-923-836-11	CUSHION	
26	3-951-155-01	DOOR	
27	3-744-080-01	COVER, BATTERY	
28	3-744-078-01	RING, SHUTTLE	
29	3-744-077-01	KNOB, SHUTTLE	
30	3-710-901-11	SCREW, TAPPING	

5-2. POWER SUPPLY BLOCK ASSEMBLY

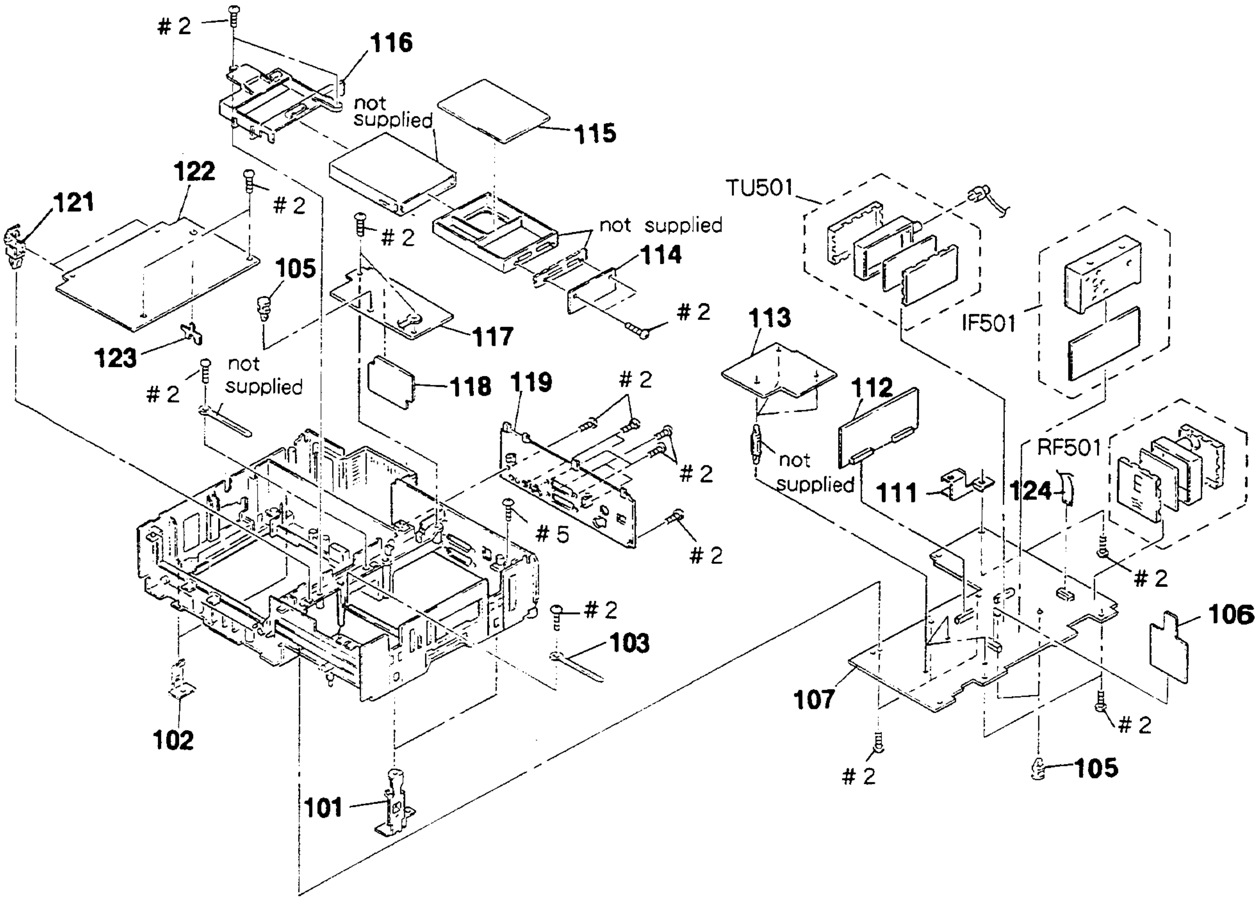


Ref. No.	Part No.	Description	Remarks
51	3-948-152-01	KNOB, SLIDE (NTSC PB ON PAL TV)	
52	3-743-636-21	KNOB, SLIDE (COMMAND MODE)	
* 53	A-6755-463-A	MF-169 BOARD, COMPLETE (AEP/NC/NP/VC)	
* 53	A-6755-667-A	MF-169 BOARD, COMPLETE (UB)	
* 53	A-6755-811-A	MF-169 BOARD, COMPLETE (B)	
* 54	A-6755-467-A	MF-170 BOARD, COMPLETE (AEP/B/NC/NP/VC)	
* 54	A-6755-668-A	MF-170 BOARD, COMPLETE (UB)	
* 55	3-948-133-01	BRACKET (R), GROUND	
* 56	3-948-156-01	HOLDER, PWB	
* 57	3-948-134-01	BRACKET (L), GROUND	
* 58	3-948-157-01	HOLDER, FL	
* 59	A-6721-466-A	MF-167 BOARD, COMPLETE (AEP)	
* 59	A-6721-476-A	MF-167 BOARD, COMPLETE (NC)	
* 59	A-6721-477-A	MF-167 BOARD, COMPLETE (NP)	
* 59	A-6721-479-A	MF-167 BOARD, COMPLETE (VC)	
* 59	A-6721-499-A	MF-167 BOARD, COMPLETE (UB)	
* 59	A-6721-513-A	MF-167 BOARD, COMPLETE (B)	
* 60	A-6755-466-A	MF-168 BOARD, COMPLETE (AEP/B/NC/NP/VC)	
* 60	A-6755-660-A	MF-168 BOARD, COMPLETE (UB)	
61	3-741-948-11	SCREW (3), SPECIAL (+) TAPPING	

Ref. No.	Part No.	Description	Remarks
* 62	3-944-614-01	PLATE, GROUND, JK	
* 63	3-944-613-01	PLATE, GROUND, MF	
* 65	3-946-136-11	COVER (S), REAR	
⚠66	1-413-756-11	POWER BLOCK (SR-425)(AEP/B/E/NC/NP)	
⚠66	1-413-757-11	POWER BLOCK (SR-426)(UB)	
⚠66	1-413-758-11	POWER BLOCK (SR-427)(VC)	
* 67	A-6727-417-A	RP-147 BOARD, COMPLETE (AEP/NC/NP/VC)	
* 67	A-6727-459-A	RP-147 BOARD, COMPLETE (UB)	
* 67	A-6727-467-A	RP-147 BOARD, COMPLETE (B)	
68	3-736-055-01	SCREW (3X8), TAPPING	
* 69	3-350-683-01	CUSHION (LED), RUBBER	
70	1-696-439-11	WIRE, FLAT TYPE (10 CORE)	
71	1-696-440-11	WIRE, FLAT TYPE (16 CORE)	
* 72	A-6721-515-A	TC-27 BOARD COMPLETE (B)	
LCD601	1-519-507-41	INDICATOR TUBE, FLUORESCENT	

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-3. MAIN BOARDS ASSEMBLY

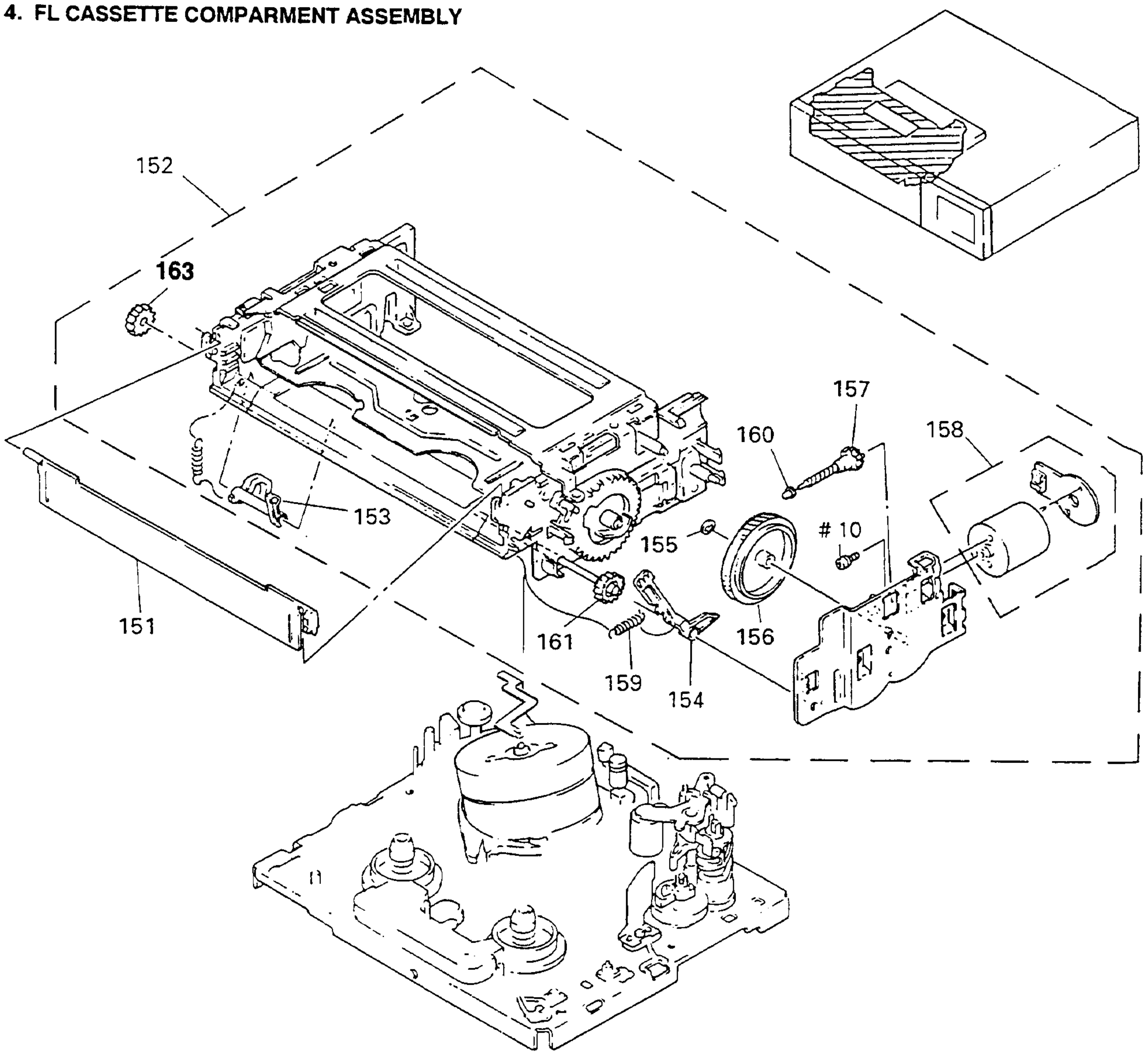


Ref. No.	Part No.	Description	Remarks
* 101	3-945-137-01	STOPPER (L), UPPER COVER	
* 102	3-741-992-01	STOPPER, UPPER CASE	
103	3-703-150-11	STOPPER, WIRING	
105	3-682-057-11	SPACER (SMALL)	
* 106	A-6755-563-A	VP-33 BOARD, COMPLETE (VC)	
* 106	A-6755-799-A	VP-33 BOARD, COMPLETE (B/NC/E)	
* 107	A-6756-465-A	MA-140 BOARD, COMPLETE (AEP)	
* 107	A-6756-560-A	MA-140 BOARD, COMPLETE (NC/E)	
* 107	A-6756-561-A	MA-140 BOARD, COMPLETE (NP)	
* 107	A-6756-564-A	MA-140 BOARD, COMPLETE (VC)	
* 107	A-6756-661-A	MA-140 BOARD, COMPLETE (UB)	
* 107	A-6756-813-A	MA-140 BOARD, COMPLETE (B)	
* 111	3-741-962-01	PLATE, GROUND, JMP	
* 112	A-6721-475-A	HF-26 BOARD, COMPLETE (AEP/B/NC/NP/VC)	
* 112	A-6721-502-A	HF-26 BOARD, COMPLETE (UB)	
* 113	A-6721-481-A	CG-15 BOARD, COMPLETE (B/VC)	
* 113	A-6756-559-A	CG-15 BOARD, COMPLETE (AEP/NC/NP/E)	
* 113	A-6756-671-A	CG-15 BOARD, COMPLETE (UB)	
* 114	1-637-536-21	DI-43 BOARD	
* 115	A-6727-419-A	DG-11 BOARD, COMPLETE (AEP/B/NC/NP/VC)	
* 115	A-6727-458-A	DG-11 BOARD, COMPLETE (UB)	
* 116	3-948-126-01	HOLDER, DG	
* 117	A-6755-469-A	VI-116 BOARD, COMPLETE (AEP/NC/E)	
* 117	A-6755-569-A	VI-116 BOARD, COMPLETE (NP/VC)	
* 117	A-6755-670-A	VI-116 BOARD, COMPLETE (UB)	

Ref. No.	Part No.	Description	Remarks
* 117	A-6755-812-A	VI-116 BOARD, COMPLETE (B)	
* 118	A-6755-468-A	CN-62 BOARD, COMPLETE (AEP/NC/E)	
* 118	A-6755-568-A	CN-62 BOARD, COMPLETE (B/NP/VC)	
* 118	A-6755-669-A	CN-62 BOARD, COMPLETE (UB)	
* 119	3-948-132-01	PLATE, ORNAMENTAL, JACK (AEP/UK/NC/E)	
119	3-948-132-31	PLATE, ORNAMENTAL, JACK (B)	
119	3-948-132-11	PLATE, ORNAMENTAL, JACK (VC)	
119	3-948-132-21	PLATE, ORNAMENTAL, JACK (NP)	
121	3-736-704-01	HINGE, PC BOARD	
* 122	A-6727-418-A	YC-124 BOARD, COMPLETE (AEP/NC/NP)	
* 122	A-6727-465-A	YC-124 BOARD, COMPLETE (B)	
* 122	A-6727-442-A	YC-124 BOARD, COMPLETE (VC)	
* 122	A-6727-456-A	YC-124 BOARD, COMPLETE (UB)	
* 123	3-948-127-01	HOLDER, HF	
124	1-696-438-11	WIRE, FLAT TYPE (13 CORE) (B/NP/VC)	
⚠IF501	1-466-539-11	IF BLOCK (IFZ-389ST) (AEP/VC)	
⚠IF501	1-466-540-11	IF BLOCK (IFZ-389FE) (B)	
⚠IF501	1-466-541-11	IF BLOCK (IFZ-395NC) (UB)	
⚠IF501	1-466-538-11	IF BLOCK (IFZ-389NC) (NC/NP/E)	
⚠RF501	1-466-328-11	MODULATOR, RF (RFU-2017) (AEP/NC/NP/VC)	
⚠RF501	1-466-347-11	MODULATOR, RF (RFU-2024) (UB)	
⚠RF501	1-466-348-11	MODULATOR, RF (RFU-2023) (B)	
⚠TU501	1-465-260-11	TUNER, ET (BTP-2C401) (AEP/NC/NP/VC)	
⚠TU501	1-465-262-11	TUNER, ET (UB)	

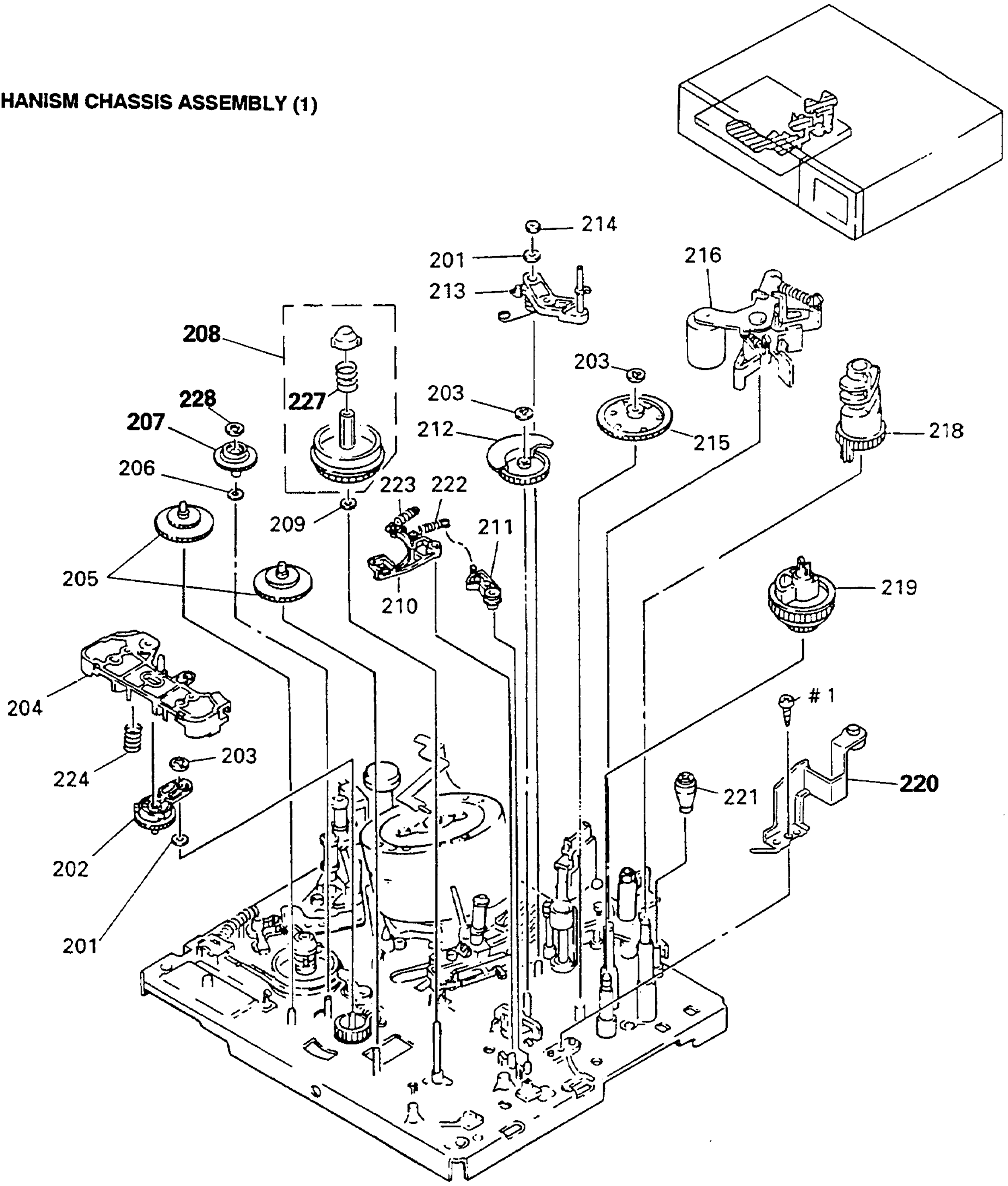
Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

5-4. FL CASSETTE COMPARMENT ASSEMBLY



Ref. No.	Part No.	Description	Remarks
151	3-945-199-11	DOOR, FL (BLACK)	
151	3-945-199-41	DOOR, FL (VC:GOLD)	
152	A-6751-453-A	FL BLOCK ASSY	
153	3-736-163-01	LEVER, ERASING PROTECTION	
154	3-736-167-01	ARM, DOOR SWITCHING	
155	3-696-510-01	WASHER (3), STOPPER	
156	3-736-164-01	WHEEL (FL), WORM	
157	3-736-100-01	GEAR (FL), WORM	
158	X-3727-784-1	MOTOR ASSY (M904)	
159	3-738-285-01	SPRING, TENSION	
160	3-716-144-02	RETAINER, WORM	
161	X-3727-775-2	GEAR (RIGHT) ASSY, MIDWAY	
163	3-736-044-02	GEAR (LEFT), MIDWAY	

5-5. MECHANISM CHASSIS ASSEMBLY (1)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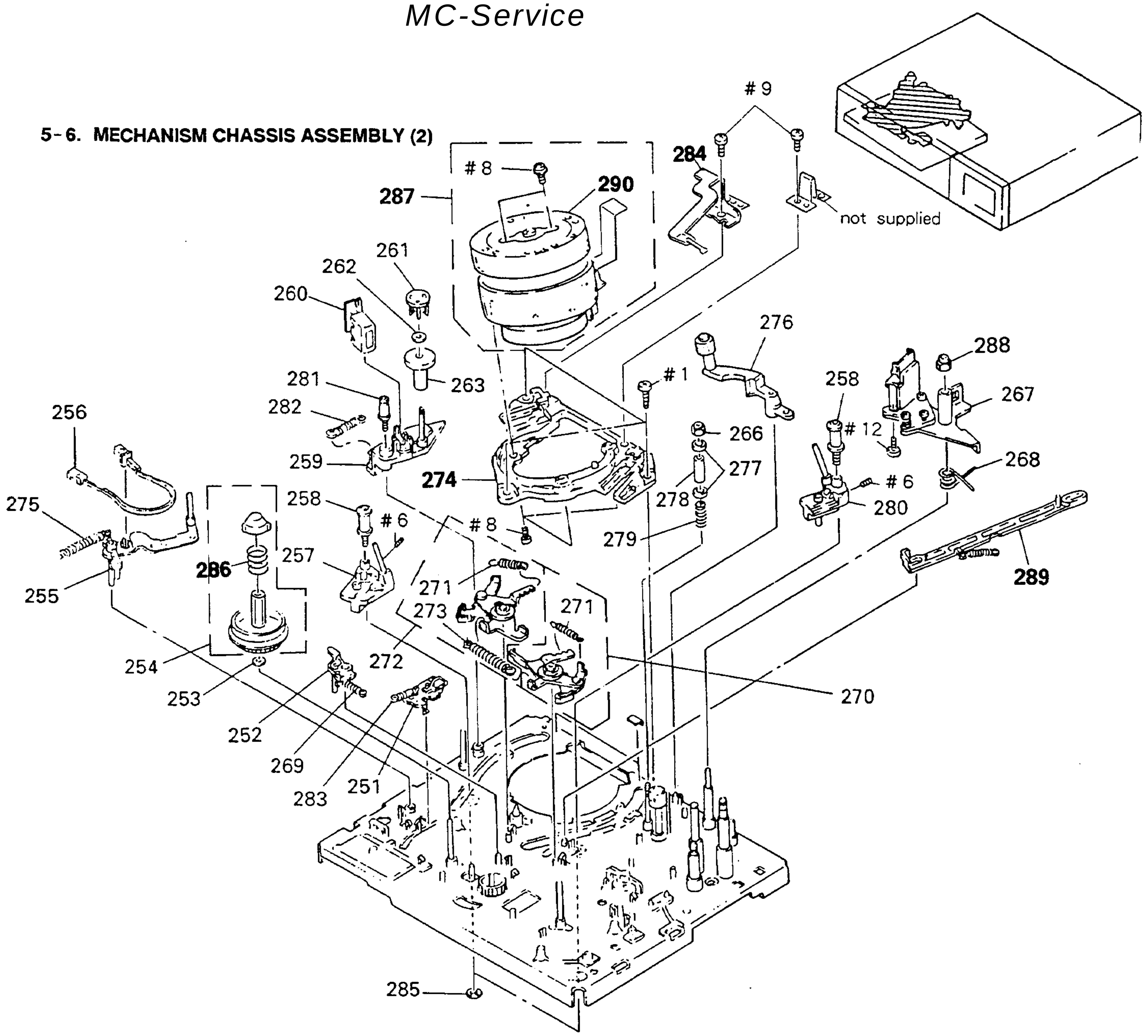
Ref. No.	Part No.	Description	Remarks
201	3-701-438-11	WASHER, 2.5	
202	X-3727-776-1	ARM ASSY, PENDULUM	
203	3-669-595-00	WASHER (2), STOPPER	
204	3-736-172-02	RELEASE, LOCK, REEL	
205	X-3727-795-1	GEAR ASSY, RELAY	
206	3-736-074-01	RETAINER (SMALL), THRUST	
207	3-736-037-01	GEAR, REW	
208	X-3727-798-1	TABLE ASSY, REEL (T)	
209	3-738-212-21	RETAINER, THRUST, REEL TABLE	
210	X-3733-335-1	BRAKE ASSY (AT), T SOFT	
211	3-736-105-01	ARM, REV BRAKE	
212	3-736-143-01	GEAR, RVS CAM	

Ref. No.	Part No.	Description	Remarks
213	X-3942-218-1	ARM ASSY, RVS	
214	3-736-740-01	NUT (M2X0.25), NYLON	
215	3-736-116-01	GEAR, COMMUNICATION	
216	X-3727-770-1	PINCH ROLLER BLOCK ASSY	
218	3-736-136-01	CAM, ELEVATOR	
219	3-943-700-01	GEAR (LO), PRESS CAM	
220	3-942-828-01	OPENNER, LID	
221	3-738-250-01	SCREW, AC ADJUSTMENT	
222	3-736-025-01	SPRING (REV BRAKE), TENSION	
223	3-736-024-01	SPRING, TENSION	
224	3-736-020-11	SPRING, COMPRESSION	
227	3-739-621-01	SPRING, COMPRESSION	
228	3-736-069-01	RETAINER	

5-6. MECHANISM CHASSIS ASSEMBLY (2)



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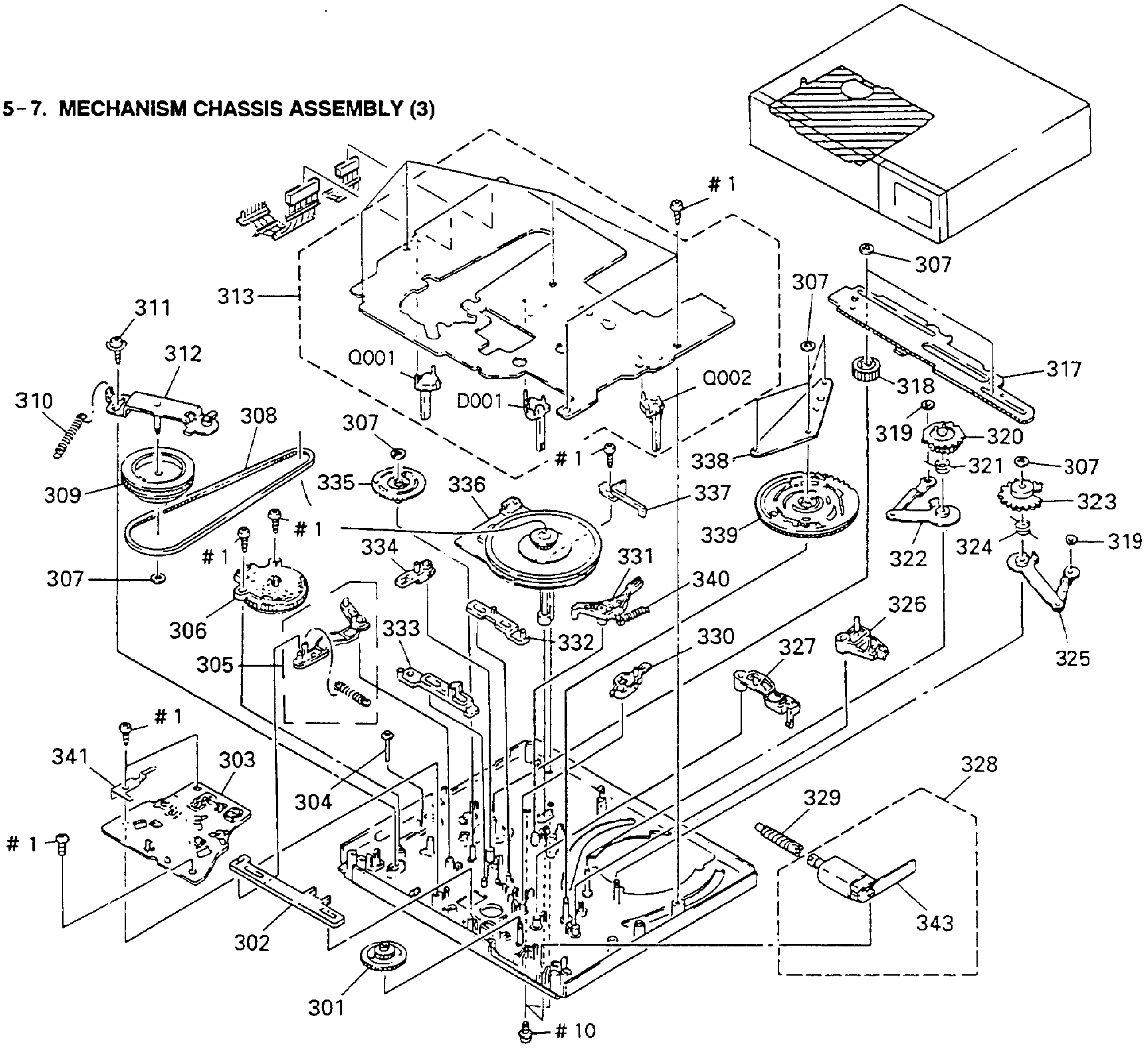
Ref. No.	Part No.	Description	Remarks
251	A-6759-483-A	TAKE-UP BLOCK ASSY (AT), S	
252	3-736-075-01	BRAKE, S SOFT	
253	3-738-212-21	RETAINER, THRUST, REEL TABLE	
254	X-3941-194-1	TABLE ASSY, REEL, S	
255	3-736-151-11	ARM (POM), TENSION REGULATOR	
256	X-3727-797-1	BAND ASSY, TENSION REGULATOR	
257	X-3727-786-1	SHUTTLE (LEFT) ASSY	
258	X-3733-301-1	ROLLER ASSY, GUIDE	
259	X-3727-767-1	BASE ASSY, STABILIZER	
260	1-543-647-11	HEAD, FE	
261	3-736-082-01	RETAINER, TS THRUST	
262	3-741-925-01	RING, RETAINING	
263	X-3727-771-1	STABLILIZER ASSY, TAPE	
266	3-942-866-01	NUT (M3) (3X0.5), NYLON	
267	A-6761-129-C	HEAD BLOCK ASSY, ACE	
268	3-736-735-03	SPRING, TENSION	
269	3-736-047-01	SPRING (S SOFT), TENSION	
270	X-3729-926-1	BRAKE ASSY (2), T	
271	3-738-220-01	SPRING (MAIN BRAKE 2), TENSION	
272	X-3733-336-2	BRAKE ASSY (2) (AT), S	
273	3-738-221-01	SPRING (MAIN BRAKE 1), TENSION	
274	X-3727-791-2	BASE ASSY, DRUM	
275	3-733-389-11	SPRING, TENSION	
276	A-6747-267-A	ARM BLOCK ASSY (S), C ROLLER	
277	3-944-033-01	FLANGE, 7 GUIDE	
278	3-736-730-01	SLEEVE, #7 GUIDE	
279	3-749-099-01	SPRING (#7 GUIDE), COMPRESSION	
280	X-3727-787-1	SHUTTLE (RIGHT) ASSY	
281	X-3727-788-1	ROLLER ASSY, GUIDE, #2	
282	3-736-745-01	SPRING	
283	3-738-284-01	SPRING, TENSION	
284	X-3733-304-1	GROUND ASSY, SHAFT	
285	3-736-073-01	SLIDER, POLYETHYLENE	
286	3-739-621-01	SPRING, COMPRESSION	
287	1-550-786-11	DRUM ASSY (DZH-52AR)	
288	3-942-867-01	NUT, AC HEIGHT ADJUSTMENT	
289	X-3743-517-1	LEVER(S), RELEASE	
290	1-550-536-11	DRUM ASSY, ROTARY UPPER (DZR-17)	

5-7. MECHANISM CHASSIS ASSEMBLY (3)



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Ref. No.	Part No.	Description	Remarks
301	3-736-015-01	WHEEL (CAM), WORM	
302	3-736-158-01	PLATE, SLIDE, PENDULUM	
303	A-6739-084-A	CHASSIS BLOCK ASSY, SUB	
304	3-736-091-01	PIN, SWITCH	
305	X-3729-924-1	ARM, PENDULUM FUNCTION	
306	1-692-062-11	SWITCH, ROTARY	
307	3-669-595-00	WASHER (2), STOPPER	
308	3-736-013-01	BELT, TIMING	
309	X-3727-782-1	PULLEY ASSY	
310	3-736-089-01	SPRING, TENSION	
311	3-733-386-01	SCREW (3X8), WASHER	
312	X-3727-761-1	ARM ASSY, ADJUSTMENT	
* 313	A-6754-435-A	MD-58 BOARD, COMPLETE	
317	3-736-177-01	PLATE, SLIDE, MODE	
318	3-733-394-01	GEAR, RVS RELAY	
319	3-736-073-01	SLIDER, POLYETHYLENE	
320	3-736-148-01	GEAR (RIGHT), THREADING	
321	3-736-092-01	SPRING (RIGHT), TORSION	
322	X-3727-777-1	ARM (RIGHT) ASSY, THREADING	
323	3-736-147-01	GEAR (LEFT), THREADING	
324	3-736-040-01	SPRING (LEFT), TORSION	
325	X-3727-778-1	ARM (LEFT) ASSY, THREADING	
326	3-736-142-01	ARM, TENSION REGULATOR FUNCTION	
327	3-736-140-01	ARM, S TAKE-UP	
328	X-3733-302-1	MOTOR ASSY, CAM	
329	3-733-395-01	GEAR (CAM), WORM	
330	3-733-397-01	ARM, BRAKE FUNCTION	
331	X-3733-338-1	BRAKE ASSY (AT), CAP	
332	3-733-398-01	PLATE, SLIDE, BRAKE	
333	3-736-103-01	PLATE, SLIDE, LIMITER	
334	3-736-016-01	ARM, LIMITER FUNCTION	
335	3-736-170-01	GEAR, RKB CAM	
336	8-835-489-01	MOTOR, DC U-26K	
337	3-736-744-01	RETAINER, ROTOR	
338	3-733-396-01	HOLDER, CAM GEAR	
339	3-736-176-01	GEAR, CAM	
340	3-738-237-01	SPRING (CAP BRAKE), TENSION	
341	3-741-950-01	SPRING (AT), LEAF, SC GROUND	
* 343	1-633-460-11	PC BOAD, CA-41	
D001	8-719-985-00	DIODE GL451VS1	
Q001	8-729-926-31	TRANSISTOR PT483F1S	
Q002	8-729-926-31	TRANSISTOR PT483F1S	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque ⚠ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spéci-fie.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL : metal-film resistor
  METAL OXIDE : Metal Oxide-film resistor
  F : nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example :
  uA... : μA... , uPA... , μPA... ,
  uPB... , μPB... ,uPC... , μPC... ,
  uPD..., μPD...
- CAPACITORS :
  uF : μF
- COILS
  uH : μH

Ref. No.	Part No.	Description	Remarks
*	A-6756-559-A	CG-15 BOARD, COMPLETE (AEP/NC/NP)	
		**********************************	
*	A-6756-671-A	CG-15 BOARD, COMPLETE (UB)	
		***************************	
*	A-6721-481-A	CG-15 BOARD, COMPLETE (B/VC)	
		***************************	
		(Ref. No. 6000 Series)	
		< CAPACITOR >	
C601	1-163-036-00	CERAMIC CHIP 0.068uF 50V	
C602	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C603	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	
C604	1-163-227-11	CERAMIC CHIP 10PF 5% 50V	
C605	1-124-589-11	ELECT 47uF 20% 16V	
C606	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C607	1-124-903-11	ELECT 1uF 20% 50V	
C608	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C609	1-124-443-00	ELECT 100uF 20% 10V	
C610	1-163-237-11	CERAMIC CHIP 27PF 5% 50V	
C611	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C614	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C615	1-163-006-11	CERAMIC CHIP 560PF 10% 50V	
C616	1-126-301-11	ELECT 1uF 20% 50V	
C617	1-163-007-11	CERAMIC CHIP 680PF 10% 50V	
C618	1-163-127-00	CERAMIC CHIP 270PF 5% 50V	
C619	1-163-127-00	CERAMIC CHIP 270PF 5% 50V	
C620	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C621	1-124-126-00	ELECT 47uF 20% 10V	
C622	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C623	1-163-099-00	CERAMIC CHIP 18PF 5% 50V	
C624	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
C625	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C626	1-126-157-11	ELECT 10uF 20% 16V	
C627	1-130-487-00	MYLAR 0.022uF 5% 50V	
C629	1-163-035-00	CERAMIC CHIP 0.047uF 50V	

Ref. No.	Part No.	Description	Remarks
		< CONNECTOR >	
* CN601	1-563-312-11	CONNECTOR, BOARD TO BOARD 12P	
CN602	1-563-311-11	CONNECTOR, BOARD TO BOARD 10P	
		< VARIABLE CAPACITOR >	
CV601	1-141-245-00	CAP, TRIMMER 30PF	
		< IC >	
IC601	8-759-078-01	IC uPD78013GC-VSX1760	
IC602	8-759-078-02	IC M50555-VSX1760	
IC603	8-759-996-03	IC LVA519S	
		< JUMPER RESISTOR >	
JR601	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR603	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR604	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR606	1-216-296-00	METAL CHIP 0 5% 1/8W	
		< COIL >	
L601	1-410-521-11	INDUCTOR 100uH	
L602	1-410-521-11	INDUCTOR 100uH	
L603	1-412-470-21	INDUCTOR 22uH	
L604	1-410-515-11	INDUCTOR 33uH	
L605	1-410-509-11	INDUCTOR 10uH	
L606	1-410-521-11	INDUCTOR 100uH	
L607	1-410-521-11	INDUCTOR 100uH	
L608	1-410-316-11	INDUCTOR 1uH	
L609	1-410-521-11	INDUCTOR 100uH	
L610	1-410-521-11	INDUCTOR 100uH	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remarks
Q603	8-729-422-28	TRANSISTOR 2SD601A-R	
Q604	8-729-422-37	TRANSISTOR 2SB709A-R	
Q605	8-729-424-18	TRANSISTOR UN2113	
Q606	8-729-422-28	TRANSISTOR 2SD601A-R	
Q607	8-729-421-19	TRANSISTOR UN2213	
Q608	8-729-422-28	TRANSISTOR 2SD601A-R	
Q609	8-729-421-19	TRANSISTOR UN2213	

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R601	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R602	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R603	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R604	1-216-097-00	METAL CHIP 100K 5% 1/10W	
⚠R605	1-249-413-11	CARBON 470 5% 1/4W F	
R606	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R607	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
⚠R608	1-249-422-11	CARBON 2.7K 5% 1/4W F	
R609	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R610	1-216-041-00	METAL CHIP 470 5% 1/10W	
R611	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R612	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R613	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R614	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R615	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R616	1-216-041-00	METAL CHIP 470 5% 1/10W	
R617	1-216-043-00	METAL CHIP 560 5% 1/10W	
R618	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R619	1-216-041-00	METAL CHIP 470 5% 1/10W	
R620	1-216-295-00	METAL CHIP 0 5% 1/10W	
R623	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R624	1-216-043-00	METAL CHIP 560 5% 1/10W	
R625	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R629	1-216-043-00	METAL CHIP 560 5% 1/10W	
R630	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R640	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R641	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R642	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R643	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R644	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R645	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R647	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R648	1-216-041-00	METAL CHIP 470 5% 1/10W	
R649	1-216-041-00	METAL CHIP 470 5% 1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remarks
RV601	1-241-079-11	RES, ADJ, CARBON 4.7K (AEP/UB/NC/NP)	
RV601	1-241-629-11	RES, ADJ, CARBON 4.7K (B/VC)	

< VIBRATOR >

Ref. No.	Part No.	Description	Remarks
X601	1-577-157-11	VIBRATOR, CERAMIC 8MHz	
X602	1-577-289-11	VIBRATOR, CRYSTAL 17.7MHZ	

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Ref. No.	Part No.	Description	Remarks
*	A-6755-468-A	CN-62 BOARD, COMPLETE (AEP/NC)	

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Ref. No.	Part No.	Description	Remarks
*	A-6755-669-A	CN-62 BOARD, COMPLETE (UB)	

****

Ref. No.	Part No.	Description	Remarks
*	A-6755-568-A	CN-62 BOARD, COMPLETE (B/NP/VC)	

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(Ref. No. 4000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remarks
C101	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C102	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C103	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C104	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C105	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C106	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C107	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C108	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C801	1-124-589-11	ELECT 47uF 20% 16V	(B/NP/VC)
C802	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(B/NP/VC)
C803	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(B/NP/VC)
C804	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(B/NP/VC)
C805	1-126-157-11	ELECT 10uF 20% 16V	(B/NP/VC)
C806	1-126-157-11	ELECT 10uF 20% 16V	(B/NP/VC)
C807	1-126-157-11	ELECT 10uF 20% 16V	(B/NP/VC)
C808	1-126-157-11	ELECT 10uF 20% 16V	(B/NP/VC)
C809	1-126-157-11	ELECT 10uF 20% 16V	(B/NP/VC)
C810	1-126-157-11	ELECT 10uF 20% 16V	(B/NP/VC)
C812	1-124-589-11	ELECT 47uF 20% 16V	(B/NP/VC)
C813	1-124-589-11	ELECT 47uF 20% 16V	(B/NP/VC)

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
* CN102	1-573-735-41	PIN, CONNECTOR 8P	
CN103	1-691-277-11	CONNECTOR, BOARD TO BOARD 13P	

< JACK >

Ref. No.	Part No.	Description	Remarks
CNJ101	1-561-534-41	SOCKET 21P (EURO-AV(LINE 3))	

< DIODE >

Ref. No.	Part No.	Description	Remarks
D101	8-719-109-97	DIODE RD6.8ES-B2	
D102	8-719-109-97	DIODE RD6.8ES-B2	
D103	8-719-109-97	DIODE RD6.8ES-B2	
D104	8-719-109-97	DIODE RD6.8ES-B2	
D105	8-719-109-97	DIODE RD6.8ES-B2	

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
D106	8-719-109-97	DIODE RD6.8ES-B2	
D107	8-719-108-12	DIODE RD9.1E-W	

< IC >

Ref. No.	Part No.	Description	Remarks
IC801	8-759-300-71	IC TC4053BF	(B/NP/VC)
IC802	8-759-909-71	IC BA4558F	(B/NP/VC)

< COIL >

Ref. No.	Part No.	Description	Remarks
L101	1-408-425-00	INDUCTOR 220uH	
L102	1-408-425-00	INDUCTOR 220uH	
L103	1-408-425-00	INDUCTOR 220uH	
L104	1-408-425-00	INDUCTOR 220uH	
L801	1-410-521-11	INDUCTOR 100uH	(NP/VC)

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R101	1-216-041-00	METAL CHIP 470 5% 1/10W	
R102	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R103	1-216-041-00	METAL CHIP 470 5% 1/10W	
R104	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R105	1-216-022-00	METAL CHIP 75 5% 1/10W	
R106	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R107	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R801	1-216-097-00	METAL CHIP 100K 5% 1/10W	(B/NP/VC)
R802	1-216-097-00	METAL CHIP 100K 5% 1/10W	(B/NP/VC)
R803	1-216-097-00	METAL CHIP 100K 5% 1/10W	(B/NP/VC)
R804	1-216-097-00	METAL CHIP 100K 5% 1/10W	(B/NP/VC)
R805	1-216-113-00	METAL CHIP 470K 5% 1/10W	(B/NP/VC)
R806	1-216-113-00	METAL CHIP 470K 5% 1/10W	(B/NP/VC)
R807	1-216-113-00	METAL CHIP 470K 5% 1/10W	(B/NP/VC)
R808	1-216-113-00	METAL CHIP 470K 5% 1/10W	(B/NP/VC)
R809	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B/NP/VC)
R810	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B/NP/VC)
R811	1-216-081-00	METAL CHIP 22K 5% 1/10W	(B/NP/VC)
R812	1-216-081-00	METAL CHIP 22K 5% 1/10W	(B/NP/VC)
R815	1-216-025-00	METAL CHIP 100 5% 1/10W	(B/NP/VC)
R816	1-216-025-00	METAL CHIP 100 5% 1/10W	(B/NP/VC)

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* A-6727-419-A DG-11 BOARD, COMPLETE (EXCEPT UB)

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* A-6727-458-A DG-11 BOARD, COMPLETE (UB)

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(Ref. No. 7000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remarks
C101	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	
C102	1-163-139-00	CERAMIC CHIP 820PF 5% 50V	
C103	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
C104	1-124-499-11	ELECT, NONPOLAR 1uF 20% 50V	
C105	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C106	1-126-177-11	ELECT 100uF 20% 10V	
C107	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C108	1-126-101-11	ELECT 100uF 20% 16V	
C109	1-126-157-11	ELECT 10uF 20% 16V	
C113	1-126-163-11	ELECT 4.7uF 20% 50V	
C114	1-126-301-11	ELECT 1uF 20% 50V	
C115	1-126-099-11	ELECT 2.2uF 20% 35V	
C124	1-163-135-00	CERAMIC CHIP 560PF 5% 50V	
C125	1-126-301-11	ELECT 1uF 20% 50V	
C127	1-163-135-00	CERAMIC CHIP 560PF 5% 50V	
C128	1-126-301-11	ELECT 1uF 20% 50V	
C129	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C130	1-124-257-00	ELECT 2.2uF 20% 50V	
C131	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C132	1-124-464-11	ELECT 0.22uF 20% 50V	
C133	1-126-163-11	ELECT 4.7uF 20% 50V	
C134	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C135	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	
C136	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	
C137	1-126-157-11	ELECT 10uF 20% 16V	
C138	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C139	1-126-177-11	ELECT 100uF 20% 10V	
C140	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C141	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C142	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C143	1-124-257-00	ELECT 2.2uF 20% 50V	
C144	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
C145	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
C146	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V	
C147	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C148	1-126-301-11	ELECT 1uF 20% 50V	
C149	1-163-093-00	CERAMIC CHIP 10PF 5% 50V	
C150	1-126-177-11	ELECT 100uF 20% 10V	
C151	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C152	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C153	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C154	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C155	1-124-257-00	ELECT 2.2uF 20% 50V	
C156	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C157	1-124-464-11	ELECT 0.22uF 20% 50V	
C158	1-126-163-11	ELECT 4.7uF 20% 50V	
C159	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C161	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	
C162	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	
C163	1-126-157-11	ELECT 10uF 20% 16V	
C164	1-163-019-00	CERAMIC CHIP 0.0068uF 10% 50V	
C165	1-163-141-00	CERAMIC CHIP 0.001uF 5% 50V	
C166	1-124-257-00	ELECT 2.2uF 20% 50V	
C167	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C168	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	

Ref. No.	Part No.	Description	Remarks
C169	1-163-137-00	CERAMIC CHIP 680PF 5% 50V	
C170	1-163-145-00	CERAMIC CHIP 0.0015uF 5% 50V	
C171	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C172	1-126-301-11	ELECT 1uF 20% 50V	
C174	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C175	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C176	1-126-177-11	ELECT 100uF 20% 10V	
C177	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C179	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C180	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C181	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C182	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C183	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C184	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C187	1-126-157-11	ELECT 10uF 20% 16V	
C188	1-126-157-11	ELECT 10uF 20% 16V	
C189	1-126-157-11	ELECT 10uF 20% 16V	
C190	1-126-157-11	ELECT 10uF 20% 16V	
C191	1-126-177-11	ELECT 100uF 20% 10V	
C192	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C193	1-164-234-11	CERAMIC CHIP 1uF 10V	
C194	1-124-442-00	ELECT 330uF 20% 6.3V	
C196	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C197	1-126-177-11	ELECT 100uF 20% 10V	
C198	1-126-177-11	ELECT 100uF 20% 10V	
C199	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C200	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C201	1-126-177-11	ELECT 100uF 20% 10V	
C202	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C204	1-126-301-11	ELECT 1uF 20% 50V	
C205	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C208	1-163-245-11	CERAMIC CHIP 56PF 5% 50V	
C210	1-163-109-00	CERAMIC CHIP 47PF 5% 50V	
C250	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C251	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C252	1-163-121-00	CERAMIC CHIP 150PF 5% 50V	
C253	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C254	1-163-130-00	CERAMIC CHIP 360PF 5% 50V	
C255	1-163-128-00	CERAMIC CHIP 300PF 5% 50V	
C256	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
CN101	1-569-772-21	CONNECTOR, BOARD TO BOARD 9P	
CN103	1-568-152-21	CONNECTOR, BOARD TO BOARD 13P	

< DIODE >

Ref. No.	Part No.	Description	Remarks
D101	8-719-400-18	DIODE MA152WK	
D105	8-719-400-18	DIODE MA152WK	
D106	8-719-400-18	DIODE MA152WK	
D109	8-719-400-18	DIODE MA152WK	

< FERRITE BEAD >

Ref. No.	Part No.	Description	Remarks
FB101	1-410-397-21	FERRITE BEAD INDUCTOR	
FB102	1-410-397-21	FERRITE BEAD INDUCTOR	

< FILTER >

Ref. No.	Part No.	Description	Remarks
FL101	1-236-101-11	ENCAPSULATED COMPONENT	
FL102	1-236-101-11	ENCAPSULATED COMPONENT	
FL103	1-236-101-11	ENCAPSULATED COMPONENT	
FL104	1-236-101-11	ENCAPSULATED COMPONENT	
FL109	1-236-071-11	ENCAPSULATED COMPONENT	
FL109	1-236-593-11	FILTER, LOW PASS	
FL110	1-236-071-11	ENCAPSULATED COMPONENT	
FL110	1-236-593-11	FILTER, LOW PASS	
FL111	1-424-228-11	FILTER, NOISE	
FL111	1-424-415-11	FILTER, NOISE	
FL112	1-424-228-11	FILTER, NOISE	
FL112	1-424-415-11	FILTER, NOISE	
FL113	1-424-228-11	FILTER, NOISE	
FL113	1-424-415-11	FILTER, NOISE	
FL114	1-424-228-11	FILTER, NOISE	
FL114	1-424-415-11	FILTER, NOISE	
FL115	1-424-228-11	FILTER, NOISE	
FL115	1-424-415-11	FILTER, NOISE	
FL116	1-424-228-11	FILTER, NOISE	
FL116	1-424-415-11	FILTER, NOISE	
FL117	1-424-228-11	FILTER, NOISE	
FL117	1-424-415-11	FILTER, NOISE	
FL118	1-236-071-11	ENCAPSULATED COMPONENT	
FL118	1-236-593-11	FILTER, LOW PASS	
FL119	1-236-986-11	FILTER, BAND PASS	
FL120	1-239-449-11	FILTER, BAND PASS	
FL121	1-236-844-11	FILTER, LOW PASS	
FL122	1-236-071-11	ENCAPSULATED COMPONENT	
FL122	1-236-593-11	FILTER, LOW PASS	

< IC >

Ref. No.	Part No.	Description	Remarks
IC101	8-759-322-29	IC HA118088MP	
IC102	8-759-323-11	IC HA11567NP	
IC103	8-759-322-34	IC HA11535MP	
IC104	8-759-322-68	IC HD49410	
IC105	8-759-322-32	IC HM53461ZP-12	
IC108	8-759-008-74	IC MC14001BF	

< COIL >

Ref. No.	Part No.	Description	Remarks
L101	1-407-169-XX	INDUCTOR 100uH	
L102	1-407-169-XX	INDUCTOR 100uH	
L105	1-407-169-XX	INDUCTOR 100uH	
L106	1-407-169-XX	INDUCTOR 100uH	
L107	1-407-169-XX	INDUCTOR 100uH	

DG-11

Ref. No.	Part No.	Description	Remarks
L108	1-407-169-XX	INDUCTOR 100uH	
L109	1-407-169-XX	INDUCTOR 100uH	
L110	1-407-169-XX	INDUCTOR 100uH	

< TRANSISTOR >

Ref. No.	Part No.	Description	Remarks
Q101	8-729-305-25	TRANSISTOR 2SA1052-C	
Q102	8-729-305-25	TRANSISTOR 2SA1052-C	
Q103	8-729-305-25	TRANSISTOR 2SA1052-C	
Q108	8-729-305-25	TRANSISTOR 2SA1052-C	
Q109	8-729-305-25	TRANSISTOR 2SA1052-C	
Q110	8-729-305-25	TRANSISTOR 2SA1052-C	
Q112	8-729-901-00	TRANSISTOR DTC124EK	
Q113	8-729-305-25	TRANSISTOR 2SA1052-C	
Q114	8-729-230-49	TRANSISTOR 2SC2712-G	
Q116	8-729-305-25	TRANSISTOR 2SA1052-C	
Q117	8-729-230-49	TRANSISTOR 2SC2712-G	
Q118	8-729-305-25	TRANSISTOR 2SA1052-C	
Q120	8-729-901-00	TRANSISTOR DTC124EK	
Q121	8-729-305-25	TRANSISTOR 2SA1052-C	
Q122	8-729-230-49	TRANSISTOR 2SC2712-G	
Q123	8-729-901-00	TRANSISTOR DTC124EK	
Q125	8-729-902-96	TRANSISTOR FMS1	
Q126	8-729-901-01	TRANSISTOR DTC144EK	
Q127	8-729-230-49	TRANSISTOR 2SC2712-G	

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R101	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R102	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R103	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R104	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R105	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R106	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R107	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R108	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R109	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R110	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R111	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R112	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R114	1-216-033-00	METAL CHIP 220 5% 1/10W	
R115	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R116	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R117	1-216-117-00	METAL CHIP 680K 5% 1/10W	
R127	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R139	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R140	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R141	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R143	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R144	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R145	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R146	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R147	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R148	1-216-037-00	METAL CHIP 330 5% 1/10W	
R149	1-216-045-00	METAL CHIP 680 5% 1/10W	
R150	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R151	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R152	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R153	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R154	1-216-013-00	METAL CHIP 33 5% 1/10W	
R155	1-216-033-00	METAL CHIP 220 5% 1/10W	
R156	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R157	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R158	1-216-039-00	METAL CHIP 390 5% 1/10W	
R159	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R165	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R166	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R167	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R168	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R170	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R171	1-216-041-00	METAL CHIP 470 5% 1/10W	
R172	1-216-041-00	METAL CHIP 470 5% 1/10W	
R173	1-216-029-00	METAL CHIP 150 5% 1/10W	
R174	1-216-041-00	METAL CHIP 470 5% 1/10W	
R175	1-216-041-00	METAL CHIP 470 5% 1/10W	
R176	1-216-047-00	METAL CHIP 820 5% 1/10W	
R177	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R178	1-216-047-00	METAL CHIP 820 5% 1/10W	
R179	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R180	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R181	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R182	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R183	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R184	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R185	1-216-013-00	METAL CHIP 33 5% 1/10W	
R186	1-216-033-00	METAL CHIP 220 5% 1/10W	
R187	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R188	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R189	1-216-039-00	METAL CHIP 390 5% 1/10W	
R190	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R196	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R197	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R198	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R199	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R200	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R201	1-216-672-11	METAL CHIP 7.5K 0.5% 1/10W	
R202	1-216-688-11	METAL CHIP 36K 0.5% 1/10W	
R203	1-216-631-11	METAL CHIP 150 0.5% 1/10W	
R204	1-216-679-11	METAL CHIP 15K 0.5% 1/10W	
R205	1-216-672-11	METAL CHIP 7.5K 0.5% 1/10W	
R206	1-216-679-11	METAL CHIP 15K 0.5% 1/10W	
R207	1-216-688-11	METAL CHIP 36K 0.5% 1/10W	
R208	1-216-631-11	METAL CHIP 150 0.5% 1/10W	

Ref. No.	Part No.	Description				Remarks
R209	1-216-079-00	METAL CHIP	18K	5%	1/10W	
R215	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R216	1-216-075-00	METAL CHIP	12K	5%	1/10W	
R218	1-216-125-00	METAL CHIP	1.5M	5%	1/10W	
R219	1-216-125-00	METAL CHIP	1.5M	5%	1/10W	
R220	1-216-295-00	METAL CHIP	0	5%	1/10W	
R221	1-216-295-00	METAL CHIP	0	5%	1/10W	
R222	1-216-109-00	METAL CHIP	330K	5%	1/10W	
R223	1-216-295-00	METAL CHIP	0	5%	1/10W	
R227	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R230	1-216-295-00	METAL CHIP	0	5%	1/10W	
R250	1-216-089-00	METAL CHIP	47K	5%	1/10W	
R251	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R252	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R253	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R254	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R255	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R256	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R257	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R258	1-216-077-00	METAL CHIP	15K	5%	1/10W	
R259	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R260	1-216-041-00	METAL CHIP	470	5%	1/10W	
R261	1-216-041-00	METAL CHIP	470	5%	1/10W	
R262	1-216-041-00	METAL CHIP	470	5%	1/10W	
R263	1-216-629-11	METAL CHIP	120	0.5%	1/10W	
R264	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R265	1-216-063-00	METAL CHIP	3.9K	5%	1/10W	
R266	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R267	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R268	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R269	1-216-049-00	METAL CHIP	1K	5%	1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description
RV101	1-241-079-11	RES, ADJ, CARBON 4.7K
RV102	1-241-077-11	RES, ADJ, CARBON 2.2K
RV103	1-241-081-11	RES, ADJ, CARBON 22K
RV104	1-241-081-11	RES, ADJ, CARBON 22K

< TRANSFORMER >

Ref. No.	Part No.	Description
T101	1-402-700-11	COIL, PEAKING 14.3MHz
T102	1-411-119-11	COIL, PEAKING 16.1MHz

< VIBRATOR >

Ref. No.	Part No.	Description
X101	1-579-222-11	OSCILLATOR, CRYSTAL 4.43MHz
X102	1-577-611-11	OSCILLATOR, CERAMIC 500kHz
X103	1-579-222-11	OSCILLATOR, CRYSTAL 4.43MHz
X104	1-577-611-11	OSCILLATOR, CERAMIC 500kHz

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* 1-637-536-21 DI-43 BOARD

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(Ref.No.5000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description				Remarks
C301	1-126-157-11	ELECT	10uF	20%	16V	

< CONNECTOR >

Ref. No.	Part No.	Description
CN201	1-569-678-21	CONNECTOR, BOARD TO BOARD 9P
CN203	1-568-104-21	CONNECTOR, BOARD TO BOARD 13P
* CN206	1-573-735-11	PIN, CONNECTOR 8P
* CN207	1-573-739-21	PIN, CONNECTOR 12P

< RESISTOR >

Ref. No.	Part No.	Description			
R301	1-216-041-00	METAL CHIP	470	5%	1/10W
R302	1-216-041-00	METAL CHIP	470	5%	1/10W

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* A-6721-475-A HF-26 BOARD, COMPLETE (EXCEPT B/UB)

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* A-6721-502-A HF-26 BOARD, COMPLETE (B/UB)

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(Ref.No.17000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description				Remarks
C201	1-124-443-00	ELECT	100uF	20%	10V	
C202	1-124-443-00	ELECT	100uF	20%	10V	
C204	1-126-101-11	ELECT	100uF	20%	16V	
C205	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C206	1-124-925-11	ELECT	2.2uF	20%	100V	
C207	1-124-126-00	ELECT	47uF	20%	10V	
C208	1-124-927-11	ELECT	4.7uF	20%	100V	
C209	1-124-907-11	ELECT	10uF	20%	50V	
C212	1-124-126-00	ELECT	47uF	20%	10V	
C213	1-124-126-00	ELECT	47uF	20%	10V	
C214	1-124-126-00	ELECT	47uF	20%	10V	
C215	1-124-907-11	ELECT	10uF	20%	50V	
C216	1-124-927-11	ELECT	4.7uF	20%	100V	
C217	1-124-925-11	ELECT	2.2uF	20%	100V	
C218	1-124-925-11	ELECT	2.2uF	20%	100V	
C219	1-124-907-11	ELECT	10uF	20%	50V	
C220	1-124-907-11	ELECT	10uF	20%	50V	
C221	1-130-483-00	MYLAR	0.01uF	5%	50V	
C222	1-124-927-11	ELECT	4.7uF	20%	100V	
C223	1-126-176-11	ELECT	220uF	20%	10V	
C224	1-124-925-11	ELECT	2.2uF	20%	100V	
C225	1-130-487-00	MYLAR	0.022uF	5%	50V	
C226	1-126-096-11	ELECT	10uF	20%	35V	
C227	1-124-234-00	ELECT	22uF	20%	16V	
C228	1-130-473-00	MYLAR	0.0015uF	5%	50V	

Ref. No.	Part No.	Description	Remarks
C229	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C230	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C231	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C232	1-124-443-00	ELECT 100uF 20% 10V	
C233	1-130-477-00	MYLAR 0.0033uF 5% 50V	
C234	1-124-903-11	ELECT 1uF 20% 50V	
C235	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C236	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C237	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C239	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C240	1-130-475-00	MYLAR 0.0022uF 5% 50V	
C241	1-130-473-00	MYLAR 0.0015uF 5% 50V	
C242	1-124-234-00	ELECT 22uF 20% 16V	
C244	1-126-096-11	ELECT 10uF 20% 35V	
C245	1-130-487-00	MYLAR 0.022uF 5% 50V	
C246	1-124-925-11	ELECT 2.2uF 20% 100V	
C247	1-126-176-11	ELECT 220uF 20% 10V	
C248	1-124-927-11	ELECT 4.7uF 20% 100V	
C249	1-130-483-00	MYLAR 0.01uF 5% 50V	
C250	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C251	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C255	1-163-237-11	CERAMIC CHIP 27PF 5% 50V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
CN201	1-573-834-11	CONNECTOR, BOARD TO BOARD 20P	
CN202	1-573-828-11	CONNECTOR, BOARD TO BOARD 14P	

< DIODE >

Ref. No.	Part No.	Description	Remarks
D201	8-719-104-34	DIODE 1S2836	

< IC >

Ref. No.	Part No.	Description	Remarks
IC201	8-759-057-63	IC AN3937NFBP	
IC202	8-759-946-44	IC TK15120M	
IC203	8-759-924-46	IC BA4560F	
IC204	8-759-946-44	IC TK15120M	
IC205	8-759-938-15	IC BA178M05	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remarks
JR203	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR207	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR208	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR209	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR211	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR212	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR213	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR215	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR217	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR218	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR219	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR221	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR222	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR224	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR225	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR226	1-216-296-00	METAL CHIP 0 5% 1/8W	

< COIL >

Ref. No.	Part No.	Description	Remarks
L202	1-408-424-00	INDUCTOR 180uH	

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
⚠R203	1-249-408-11	CARBON 180 5% 1/4W	F
⚠R205	1-249-408-11	CARBON 180 5% 1/4W	F
R209	1-247-891-00	CARBON 330K 5% 1/4W	
R212	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R213	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R215	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R216	1-249-417-11	CARBON 1K 5% 1/4W	F
R218	1-216-679-11	METAL CHIP 15K 0.5% 1/10W	
R220	1-216-223-00	METAL GLAZE 11K 5% 1/8W	
R221	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R222	1-216-206-00	METAL GLAZE 2.2K 5% 1/8W	
R223	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R224	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R225	1-216-677-11	METAL CHIP 12K 0.5% 1/10W	
R226	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R227	1-249-417-11	CARBON 1K 5% 1/4W	F
R231	1-216-679-11	METAL CHIP 15K 0.5% 1/10W	
R232	1-216-677-11	METAL CHIP 12K 0.5% 1/10W	
R233	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R234	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R235	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remarks
RV201	1-241-077-11	RES, ADJ, CARBON 2.2K	
RV202	1-241-764-11	RES, ADJ, CERMET 10K	
RV204	1-241-080-11	RES, ADJ, CARBON 10K	
RV205	1-241-763-11	RES, ADJ, CERMET 4.7K	
RV206	1-241-077-11	RES, ADJ, CARBON 2.2K	
RV207	1-241-764-11	RES, ADJ, CERMET 10K	
RV208	1-241-080-11	RES, ADJ, CARBON 10K	
RV209	1-241-763-11	RES, ADJ, CERMET 4.7K	

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Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description				Remarks
*	A-6756-465-A	MA-140 BOARD, COMPLETE (AEP)				
		*****************************				
*	A-6756-661-A	MA-140 BOARD, COMPLETE (UB)				
		****************************				
*	A-6756-560-A	MA-140 BOARD, COMPLETE (NC)				
		****************************				
*	A-6756-561-A	MA-140 BOARD, COMPLETE (NP)				
		****************************				
*	A-6756-564-A	MA-140 BOARD, COMPLETE (VC)				
		****************************				
*	A-6756-813-A	MA-140 BOARD, COMPLETE (B)				
		****************************				
						(Ref.No.8000 Series)
	1-555-110-00	CABLE, PIN				
	3-831-441-XX	CUSHION				
		< CAPACITOR >				
C107	1-124-443-00	ELECT	100uF	20%	10V	
C108	1-124-471-00	ELECT	1000uF	20%	6.3V	
C110	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C111	1-124-126-00	ELECT	47uF	20%	10V	
C114	1-124-471-00	ELECT	1000uF	20%	6.3V	
C116	1-124-477-11	ELECT	47uF	20%	25V	
C117	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C201	1-124-907-11	ELECT	10uF	20%	50V	
C202	1-124-907-11	ELECT	10uF	20%	50V	
C203	1-124-907-11	ELECT	10uF	20%	50V	
C204	1-124-907-11	ELECT	10uF	20%	50V	
C205	1-124-927-11	ELECT	4.7uF	20%	100V	
C206	1-124-927-11	ELECT	4.7uF	20%	100V	
C207	1-124-907-11	ELECT	10uF	20%	50V	
C209	1-124-907-11	ELECT	10uF	20%	50V	(EXCEPT B/UB)
C209	1-126-157-11	ELECT	10uF	20%	16V	(B/UB)
C210	1-124-907-11	ELECT	10uF	20%	50V	
C211	1-162-284-31	CERAMIC	150PF	10%	50V	
C212	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C215	1-124-907-11	ELECT	10uF	20%	50V	
C216	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C217	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C220	1-124-907-11	ELECT	10uF	20%	50V	(EXCEPT B/UB)
C220	1-126-157-11	ELECT	10uF	20%	16V	(B/UB)
C225	1-124-907-11	ELECT	10uF	20%	50V	
C227	1-124-907-11	ELECT	10uF	20%	50V	
C251	1-124-907-11	ELECT	10uF	20%	50V	
C252	1-124-907-11	ELECT	10uF	20%	50V	
C253	1-124-907-11	ELECT	10uF	20%	50V	
C254	1-124-907-11	ELECT	10uF	20%	50V	
C255	1-126-163-11	ELECT	4.7uF	20%	50V	
C256	1-126-163-11	ELECT	4.7uF	20%	50V	
C257	1-124-907-11	ELECT	10uF	20%	50V	
C259	1-126-157-11	ELECT	10uF	20%	16V	
C260	1-124-907-11	ELECT	10uF	20%	50V	
C261	1-162-284-31	CERAMIC	150PF	10%	50V	
C262	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C265	1-126-157-11	ELECT	10uF	20%	16V	
C266	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C267	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C270	1-126-157-11	ELECT	10uF	20%	16V	
C275	1-124-907-11	ELECT	10uF	20%	50V	
C277	1-164-096-11	CERAMIC	0.01uF		50V	
C281	1-124-907-11	ELECT	10uF	20%	50V	
C282	1-126-157-11	ELECT	10uF	20%	16V	
C283	1-164-096-11	CERAMIC	0.01uF		50V	
C285	1-124-907-11	ELECT	10uF	20%	50V	
C286	1-124-907-11	ELECT	10uF	20%	50V	
C287	1-124-903-11	ELECT	1uF	20%	50V	(EXCEPT B/UB/VC)
C287	1-124-499-11	ELECT, NONPOLAR R	1uF	20%	50V	(B/UB/VC)
C289	1-124-907-11	ELECT	10uF	20%	50V	
C290	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C291	1-124-907-11	ELECT	10uF	20%	50V	
C298	1-124-477-11	ELECT	47uF	20%	25V	
C301	1-124-925-11	ELECT	2.2uF	20%	100V	
C302	1-124-907-11	ELECT	10uF	20%	50V	
C303	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C400	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C401	1-164-052-11	CERAMIC	18PF	5%	50V	
C402	1-164-052-11	CERAMIC	18PF	5%	50V	
C403	1-164-096-11	CERAMIC	0.01uF		50V	
C404	1-164-096-11	CERAMIC	0.01uF		50V	
C405	1-164-096-11	CERAMIC	0.01uF		50V	
C406	1-126-245-11	ELECT	330uF	20%	6.3V	
C407	1-136-161-00	MYLAR	0.047uF	10%	50V	
C408	1-130-485-00	MYLAR	0.015uF	5%	50V	
C409	1-124-925-11	ELECT	2.2uF	20%	100V	
C410	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C411	1-124-598-11	ELECT	22uF	20%	25V	
C412	1-126-101-11	ELECT	100uF	20%	16V	
C413	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C414	1-124-472-11	ELECT	470uF	20%	10V	
C415	1-124-126-00	ELECT	47uF	20%	10V	
C416	1-164-159-11	CERAMIC	0.1uF		50V	
C417	1-124-443-00	ELECT	100uF	20%	10V	(EXCEPT B/UB)
C417	1-126-177-11	ELECT	100uF	20%	10V	(B/UB)
C418	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C419	1-162-835-11	CERAMIC	0.0047uF	10%	16V	
C420	1-162-847-11	CERAMIC	0.047uF	10%	16V	
C421	1-124-477-11	ELECT	47uF	20%	25V	
C422	1-162-849-11	CERAMIC	0.068uF	10%	16V	
C423	1-126-233-11	ELECT	22uF	20%	50V	
C424	1-162-851-11	CERAMIC	0.1uF	10%	16V	
C425	1-124-925-11	ELECT	2.2uF	20%	100V	

Ref. No.	Part No.	Description				Remarks
C426	1-162-849-11	CERAMIC	0.068uF	10%	16V	
C427	1-124-455-00	ELECT	100uF	20%	16V	(B/UB)
C427	1-126-101-11	ELECT	100uF	20%	16V	(EXCEPT B/UB)
C429	1-136-161-00	MYLAR	0.047uF	10%	50V	(AEP/NC)
C429	1-164-098-11	CERAMIC	0.047uF		12V	(B/UB/NP/VC)
C501	1-126-160-11	ELECT	1uF	20%	50V	(UB)
C501	1-124-903-11	ELECT	1uF	20%	50V	(NC/NP)
C502	1-124-903-11	ELECT	1uF	20%	50V	(EXCEPT B/UB)
C503	1-126-157-11	ELECT	10uF	20%	16V	(EXCEPT UB)
C504	1-124-907-11	ELECT	10uF	20%	50V	(UB)
C521	1-126-157-11	ELECT	10uF	20%	16V	
C522	1-136-159-00	MYLAR	0.033uF	10%	50V	(EXCEPT B/UB)
C531	1-124-927-11	ELECT	4.7uF	20%	100V	
C532	1-162-306-11	CERAMIC	0.01uF	20%	16V	
C533	1-126-233-11	ELECT	22uF	20%	50V	
C534	1-124-126-00	ELECT	47uF	20%	10V	
C535	1-126-103-11	ELECT	470uF	20%	16V	
C536	1-126-233-11	ELECT	22uF	20%	50V	
C537	1-124-126-00	ELECT	47uF	20%	10V	(AEP/B/VC)
C538	1-124-477-11	ELECT	47uF	20%	25V	
C539	1-124-477-11	ELECT	47uF	20%	25V	(EXCEPT B/UB)
C540	1-130-483-00	MYLAR	0.01uF	5%	50V	(AEP/NC/VC)
C540	1-136-153-00	FILM	0.01uF	5%	50V	(NP)
C546	1-124-477-11	ELECT	47uF	20%	25V	(UB/NC/NP)
C547	1-124-126-00	ELECT	47uF	20%	10V	(UB/NC/NP)
C548	1-162-851-11	CERAMIC	0.1uF	10%	16V	(UB/NP/B)
C548	1-164-159-11	CERAMIC	0.1uF		50V	(NC)
C551	1-126-160-11	ELECT	1uF	20%	50V	(UB)
C551	1-124-903-11	ELECT	1uF	20%	50V	(NC/NP)
C552	1-124-903-11	ELECT	1uF	20%	50V	(EXCEPT B/UB)
C553	1-124-907-11	ELECT	10uF	20%	50V	(B/UB)
C554	1-124-907-11	ELECT	10uF	20%	50V	(UB)
C555	1-124-907-11	ELECT	10uF	20%	50V	(B)
C571	1-162-212-31	CERAMIC	36PF	5%	50V	
C572	1-162-205-31	CERAMIC	18PF	5%	50V	(B/UB/NC/NP)
C572	1-162-219-11	CERAMIC	68uF	5%	50V	(AEP)
C572	1-162-889-11	CERAMIC	68PF	5%	50V	(VC)
C574	1-162-847-11	CERAMIC	0.047uF	10%	16V	
C575	1-162-306-11	CERAMIC	0.01uF	20%	16V	(UB/NC/NP)
C585	1-126-160-11	ELECT	1uF	20%	50V	(UB/NC/NP)
C590	1-124-234-00	ELECT	22uF	20%	16V	
C701	1-124-903-11	ELECT	1uF	20%	50V	(EXCEPT B/UB)
C701	1-126-160-11	ELECT	1uF	20%	50V	(B/UB)
C702	1-124-126-00	ELECT	47uF	20%	10V	
C703	1-124-589-11	ELECT	47uF	20%	16V	
C704	1-126-301-11	ELECT	1uF	20%	50V	
C705	1-130-488-00	MYLAR	0.027uF	5%	50V	
C706	1-130-492-11	MYLAR	0.056uF	5%	50V	
C707	1-126-163-11	ELECT	4.7uF	20%	50V	
C708	1-124-589-11	ELECT	47uF	20%	16V	
C709	1-124-126-00	ELECT	47uF	20%	10V	
C710	1-164-083-11	CERAMIC	680PF	10%	50V	
C711	1-164-092-11	CERAMIC	0.0033uF	10%	25V	
C712	1-124-465-00	ELECT	0.47uF	20%	50V	
C713	1-124-903-11	ELECT	1uF	20%	50V	
C714	1-130-483-00	MYLAR	0.01uF	5%	50V	
C715	1-124-126-00	ELECT	47uF	20%	10V	
C716	1-164-078-11	CERAMIC	270PF	10%	50V	
C717	1-124-903-11	ELECT	1uF	20%	50V	
C718	1-124-598-11	ELECT	22uF	20%	25V	
C719	1-164-085-11	CERAMIC	0.001uF	10%	50V	
C720	1-164-086-11	CERAMIC	0.0012uF	10%	50V	
C721	1-164-077-11	CERAMIC	220PF	10%	50V	
C724	1-137-612-11	FILM	0.0068uF	5%	100V	
C725	1-164-087-11	CERAMIC	0.0015uF	10%	50V	
C726	1-164-095-11	CERAMIC	0.01uF	10%	16V	
C730	1-164-096-11	CERAMIC	0.01uF		50V	
C740	1-126-320-11	ELECT	10uF	20%	16V	(VC/NP/B)
C750	1-124-907-11	ELECT	10uF	20%	50V	(VC/NP/B)
C760	1-164-096-11	CERAMIC	0.01uF		50V	(VC/NP/B)
C901	1-124-907-11	ELECT	10uF	20%	50V	
C902	1-162-851-11	CERAMIC	0.1uF	10%	16V	
C905	1-164-159-11	CERAMIC	0.1uF		50V	
C906	1-164-159-11	CERAMIC	0.1uF		50V	
C910	1-124-584-00	ELECT	100uF	20%	10V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
* CN713	1-508-797-00	PIN, CONNECTOR 4P	
* CN901	1-560-894-00	PIN, CONNECTOR 6P	
CN902	1-506-473-11	PIN, CONNECTOR 8P	
* CN903	1-568-789-11	PIN, CONNECTOR 12P	
CN904	1-568-095-11	CONNECTOR (PLUG) 24P	(EXCEPT B/UB)
CN904	1-691-702-11	CONNECTOR, BOARD TO BOARD 20P	(B/UB)
CN905	1-691-703-11	CONNECTOR, BOARD TO BOARD 24P	(B/UB)
CN905	1-568-095-11	CONNECTOR (PLUG) 24P	(EXCEPT B/UB)
CN907	1-573-846-11	CONNECTOR, BOARD TO BOARD 14P	
CN908	1-573-852-11	CONNECTOR, BOARD TO BOARD 20P	
CN909	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
* CN910	1-573-128-11	PIN, CONNECTOR 5P	
CN911	1-569-337-11	CONNECTOR, BOARD TO BOARD 11P	
* CN912	1-508-742-00	PIN, CONNECTOR 3P	
* CN913	1-573-131-41	PIN, CONNECTOR 8P	
* CN914	1-568-789-11	PIN, CONNECTOR 12P	
* CN915	1-573-129-31	PIN, CONNECTOR 6P	
* CN916	1-568-788-21	PIN, CONNECTOR 11P	
CN917	1-563-590-11	CONNECTOR, FLEXIBLE 13P	(B/NP/VC)
CN918	1-506-473-11	PIN, CONNECTOR 8P	
* CN919	1-573-134-41	PIN, CONNECTOR 11P	
CN920	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN921	1-573-842-11	CONNECTOR, BOARD TO BOARD 10P	(VC)
CN922	1-566-128-11	CONNECTOR, BOARD TO BOARD 10P	

Ref. No.	Part No.	Description	Remarks
* CN923	1-506-775-11	CONNECTOR, BOARD TO BOARD 12P	
* CN925	1-573-128-31	PIN, CONNECTOR 5P (B)	
CN926	1-506-473-11	PIN, CONNECTOR 8P	

< JACK >

Ref. No.	Part No.	Description	Remarks
CNJ901	1-565-351-41	JACK, PIN 3P (LINE OUT)	
CNJ902	1-561-534-00	SOCKET 21P (EURO-AV(LINE1))	
CNJ903	1-507-562-00	JACK (OUT)	
CNJ904	1-507-562-00	JACK (CONTROL S)	

< DIODE >

Ref. No.	Part No.	Description	Remarks
D301	8-719-911-19	DIODE 1SS119	
D302	8-719-911-19	DIODE 1SS119	
D303	8-719-109-97	DIODE RD6. 8ES-B2	
D304	8-719-109-97	DIODE RD6. 8ES-B2	
D400	8-719-911-19	DIODE 1SS119	
D401	8-719-109-93	DIODE RD6. 2ES-B2	
D402	8-719-109-93	DIODE RD6. 2ES-B2	
D403	8-719-111-67	DIODE RD4. 3ES-T2B	
D404	8-719-111-75	DIODE RD4. 7ES-T2B	
D405	8-719-911-19	DIODE 1SS119	
D406	8-719-200-82	DIODE 11ES2	
D450	8-719-911-19	DIODE 1SS119 (VC/NP/B)	
D451	8-719-911-19	DIODE 1SS119 (VC/NP/B)	
D452	8-719-911-19	DIODE 1SS119 (VC/NP/B)	
D502	8-719-911-19	DIODE 1SS119	
D505	8-719-113-96	DIODE RD33ES-T2B (EXCEPT B/NC/UK)	
D505	8-719-110-78	DIODE RD33ES-B2 (B/NC/UK)	
D506	8-719-200-82	DIODE 11ES2 (UB/NP/NC)	
D580	8-719-911-19	DIODE 1SS119 (UB)	
D901	8-719-200-82	DIODE 11ES2	
D902	8-719-108-12	DIODE RD9. 1E-W	
D903	8-719-109-97	DIODE RD6. 8ES-B2	
D904	8-719-109-97	DIODE RD6. 8ES-B2	
D905	8-719-110-36	DIODE RD13ES-B2	
D906	8-719-109-97	DIODE RD6. 8ES-B2	
D907	8-719-109-97	DIODE RD6. 8ES-B2 (EXCEPT B/UB)	
D907	8-719-108-12	DIODE RD9. 1E-W (B/UB)	
D910	8-719-108-12	DIODE RD9. 1E-W	
D911	8-719-108-12	DIODE RD9. 1E-W	
D912	8-719-109-97	DIODE RD6. 8ES-B2	
D913	8-719-108-12	DIODE RD9. 1E-W	

< IC >

Ref. No.	Part No.	Description	Remarks
IC201	8-759-520-50	IC BH7733S	
IC202	8-759-961-38	IC BA6138	
IC203	8-759-140-53	IC MC14053BCP	
IC204	8-759-945-58	IC RC4558P	
IC401	8-752-836-00	IC CXP80724-040Q	
IC402	8-759-246-14	IC TA8823N	
IC403	8-759-503-91	IC TL082ACP	
⚠IC404	8-759-983-45	IC BA6238A	
IC501	8-759-512-95	IC TDA8415 (EXCEPT B/UB)	
IC502	8-759-602-48	IC M5201L (B/UB)	
IC503	8-759-602-48	IC M5201L (UB)	
IC701	8-759-805-20	IC LA7297	
IC702	8-759-602-48	IC M5201L (VC/NP/B)	

< IF BLOCK >

Ref. No.	Part No.	Description	Remarks
⚠IF501	1-466-539-11	IF BLOCK (IFZ-389ST) (AEP/VC)	
⚠IF501	1-466-541-11	IF BLOCK (IFZ-395NC) (UB)	
⚠IF501	1-466-538-11	IF BLOCK (IFZ-389NC) (NC/NP)	
⚠IF501	1-466-540-11	IF BLOCK (IFZ-389FE) (B)	

< COIL >

Ref. No.	Part No.	Description	Remarks
L102	1-408-421-00	INDUCTOR 100uH	
L110	1-410-513-11	INDUCTOR 22uH	
L215	1-410-336-11	INDUCTOR 220uH	
L265	1-410-336-11	INDUCTOR 220uH	
L281	1-410-521-11	INDUCTOR 100uH	
L282	1-410-521-11	INDUCTOR 100uH	
L283	1-410-336-11	INDUCTOR 220uH	
L284	1-410-336-11	INDUCTOR 220uH	
L285	1-410-336-11	INDUCTOR 220uH	
L286	1-410-336-11	INDUCTOR 220uH	
L290	1-408-409-00	INDUCTOR 10uH	
L301	1-408-409-00	INDUCTOR 10uH	
L302	1-408-401-00	INDUCTOR 2. 2uH	
L400	1-408-409-00	INDUCTOR 10uH	
L401	1-408-421-00	INDUCTOR 100uH	
L404	1-408-421-00	INDUCTOR 100uH	
L501	1-410-509-11	INDUCTOR 10uH (AEP/B/VC)	
L502	1-410-509-11	INDUCTOR 10uH (EXCEPT UB/B)	
L503	1-410-509-11	INDUCTOR 10uH (UB/NC/NP)	
L504	1-410-513-11	INDUCTOR 22uH	
L505	1-410-513-11	INDUCTOR 22uH	
L506	1-410-509-11	INDUCTOR 10uH (UB/NC/NP)	
L507	1-410-501-11	INDUCTOR 2. 2uH	
L508	1-410-501-11	INDUCTOR 2. 2uH	
L532	1-410-501-11	INDUCTOR 2. 2uH	
L533	1-410-501-11	INDUCTOR 2. 2uH	
L534	1-410-501-11	INDUCTOR 2. 2uH	
L701	1-412-451-21	INDUCTOR 8. 2mH	
L702	1-410-120-11	INDUCTOR 1. 2mH	
L703	1-408-421-00	INDUCTOR 100uH	
L704	1-410-091-31	INDUCTOR 22mH	
L760	1-410-509-11	INDUCTOR 10uH (VC/NP/B)	
L901	1-408-413-00	INDUCTOR 22uH (EXCEPT B/UB)	
L901	1-410-513-11	INDUCTOR 22uH (B/UB)	
L902	1-410-501-11	INDUCTOR 2. 2uH	

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MA-140

Ref. No.	Part No.	Description	Remarks
L903	1-410-501-11	INDUCTOR 2.2uH	
		< DECORDER BLOCK >	
NCM501	1-466-543-11	DECORDER BLOCK (NCA-395)	(UB)
NCM501	1-466-542-11	DECORDER BLOCK (NCA-389)	(NC/NP)
		< TRANSISTOR >	
Q101	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q102	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q103	8-729-900-89	TRANSISTOR DTC144ES	
Q104	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q105	8-729-900-89	TRANSISTOR DTC144ES	
Q109	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q202	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q203	8-729-119-78	TRANSISTOR 2SC2785-HFE	(EXCEPT B/UB)
Q203	8-729-900-89	TRANSISTOR DTC144ES	(B/UB)
Q220	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q247	8-729-119-78	TRANSISTOR 2SC2785-HFE	(VC/NP/B)
Q270	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q297	8-729-119-78	TRANSISTOR 2SC2785-HFE	(VC/NP/B)
Q298	8-729-900-89	TRANSISTOR DTC144ES	
Q301	8-729-119-78	TRANSISTOR 2SC2785-HFE	(EXCEPT UB)
Q302	8-729-900-65	TRANSISTOR DTA144ES	
Q303	8-729-900-89	TRANSISTOR DTC144ES	
Q304	8-729-119-78	TRANSISTOR 2SC2785-HFE	
Q305	8-729-900-80	TRANSISTOR DTC114ES	
Q306	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q401	8-729-423-42	TRANSISTOR 2SA1309A-R	(AEP)
Q401	8-729-422-71	TRANSISTOR UN411L	(EXCEPT AEP)
Q447	8-729-900-65	TRANSISTOR DTA144ES	
Q450	8-729-900-89	TRANSISTOR DTC144ES	(VC/NP/B)
Q501	8-729-111-55	TRANSISTOR 2SC1509	
Q502	8-729-303-37	TRANSISTOR 2SD655-E	
Q503	8-729-119-78	TRANSISTOR 2SC2785-HFE	(EXCEPT B/UB)
Q504	8-729-900-89	TRANSISTOR DTC144ES	(UB)
Q505	8-729-423-42	TRANSISTOR 2SA1309A-R	
Q507	8-729-119-78	TRANSISTOR 2SC2785-HFE	(UB/NP/NC/B)
Q508	8-729-900-80	TRANSISTOR DTC114ES	(EXCEPT UB)
Q701	8-729-140-96	TRANSISTOR KSC1008	
		< RESISTOR >	
R101	1-247-804-11	CARBON 75 5% 1/4W	
⚠R105	1-249-405-11	CARBON 100 5% 1/4W	F
⚠R106	1-249-406-11	CARBON 120 5% 1/4W	F
⚠R107	1-249-405-11	CARBON 100 5% 1/4W	F
⚠R108	1-249-403-11	CARBON 68 5% 1/4W	F
⚠R112	1-249-405-11	CARBON 100 5% 1/4W	F
⚠R113	1-249-407-11	CARBON 150 5% 1/4W	F
⚠R114	1-249-403-11	CARBON 68 5% 1/4W	F
R132	1-249-426-11	CARBON 5.6K 5% 1/4W	
⚠R133	1-249-417-11	CARBON 1K 5% 1/4W	F
⚠R134	1-249-417-11	CARBON 1K 5% 1/4W	F
R201	1-249-431-11	CARBON 15K 5% 1/4W	
R202	1-249-431-11	CARBON 15K 5% 1/4W	
R203	1-249-431-11	CARBON 15K 5% 1/4W	
⚠R204	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R205	1-249-429-11	CARBON 10K 5% 1/4W	
R206	1-249-431-11	CARBON 15K 5% 1/4W	
R208	1-247-891-00	CARBON 330K 5% 1/4W	
R209	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R210	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R211	1-249-433-11	CARBON 22K 5% 1/4W	
R212	1-249-437-11	CARBON 47K 5% 1/4W	(EXCEPT B/UB)
R212	1-247-899-11	CARBON 680K 5% 1/4W	(B/UB)
R213	1-247-899-11	CARBON 680K 5% 1/4W	(B/UB)
R213	1-249-437-11	CARBON 47K 5% 1/4W	(EXCEPT B/UB)
R214	1-249-437-11	CARBON 47K 5% 1/4W	
R215	1-249-437-11	CARBON 47K 5% 1/4W	
R216	1-249-435-11	CARBON 33K 5% 1/4W	
⚠R217	1-249-413-11	CARBON 470 5% 1/4W	F
R218	1-249-426-11	CARBON 5.6K 5% 1/4W	
⚠R219	1-249-413-11	CARBON 470 5% 1/4W	F
R220	1-249-429-11	CARBON 10K 5% 1/4W	
R221	1-249-441-11	CARBON 100K 5% 1/4W	
R222	1-249-441-11	CARBON 100K 5% 1/4W	
⚠R224	1-249-414-11	CARBON 560 5% 1/4W	F
⚠R225	1-249-405-11	CARBON 100 5% 1/4W	F
⚠R227	1-249-405-11	CARBON 100 5% 1/4W	F
R228	1-249-437-11	CARBON 47K 5% 1/4W	
R241	1-249-439-11	CARBON 68K 5% 1/4W	
R242	1-249-439-11	CARBON 68K 5% 1/4W	(B/UB)
R242	1-249-438-11	CARBON 56K 5% 1/4W	(EXCEPT B/UB)
R243	1-249-438-11	CARBON 56K 5% 1/4W	(EXCEPT B/UB)
R243	1-249-439-11	CARBON 68K 5% 1/4W	(B/UB)
R246	1-249-438-11	CARBON 56K 5% 1/4W	(EXCEPT B/UB)
R246	1-249-439-11	CARBON 68K 5% 1/4W	(B/UB)
R247	1-249-440-11	CARBON 82K 5% 1/4W	(VC/NP/B)
R251	1-249-431-11	CARBON 15K 5% 1/4W	
R252	1-249-431-11	CARBON 15K 5% 1/4W	
R253	1-249-431-11	CARBON 15K 5% 1/4W	
R254	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R255	1-249-429-11	CARBON 10K 5% 1/4W	
R256	1-249-431-11	CARBON 15K 5% 1/4W	
R258	1-247-891-00	CARBON 330K 5% 1/4W	
R259	1-249-429-11	CARBON 10K 5% 1/4W	

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
⚠R260	1-249-422-11	CARBON 2.7K 5% 1/4W	F
R261	1-249-433-11	CARBON 22K 5% 1/4W	
R262	1-249-437-11	CARBON 47K 5% 1/4W	(EXCEPT B/UB)
R262	1-247-899-11	CARBON 680K 5% 1/4W	(B/UB)
R263	1-247-899-11	CARBON 680K 5% 1/4W	(B/UB)
R263	1-249-437-11	CARBON 47K 5% 1/4W	(EXCEPT B/UB)
R264	1-249-437-11	CARBON 47K 5% 1/4W	
R265	1-249-437-11	CARBON 47K 5% 1/4W	
R266	1-249-435-11	CARBON 33K 5% 1/4W	
⚠R267	1-249-413-11	CARBON 470 5% 1/4W	F
R268	1-249-426-11	CARBON 5.6K 5% 1/4W	
⚠R269	1-249-413-11	CARBON 470 5% 1/4W	F
R270	1-249-429-11	CARBON 10K 5% 1/4W	
R271	1-249-441-11	CARBON 100K 5% 1/4W	
R272	1-249-441-11	CARBON 100K 5% 1/4W	
⚠R274	1-249-414-11	CARBON 560 5% 1/4W	F
⚠R275	1-249-405-11	CARBON 100 5% 1/4W	F
⚠R277	1-249-405-11	CARBON 100 5% 1/4W	F
R278	1-249-437-11	CARBON 47K 5% 1/4W	
R281	1-249-431-11	CARBON 15K 5% 1/4W	
R282	1-249-438-11	CARBON 56K 5% 1/4W	(EXCEPT B/UB)
R282	1-249-439-11	CARBON 68K 5% 1/4W	(B/UB)
⚠R284	1-249-417-11	CARBON 1K 5% 1/4W	F
R285	1-249-431-11	CARBON 15K 5% 1/4W	
R286	1-249-438-11	CARBON 56K 5% 1/4W	(EXCEPT B/UB)
R286	1-249-439-11	CARBON 68K 5% 1/4W	(B/UB)
R287	1-249-429-11	CARBON 10K 5% 1/4W	
R288	1-249-429-11	CARBON 10K 5% 1/4W	
R291	1-249-439-11	CARBON 68K 5% 1/4W	
R292	1-249-439-11	CARBON 68K 5% 1/4W	(B/UB)
R292	1-249-438-11	CARBON 56K 5% 1/4W	(EXCEPT B/UB)
R293	1-249-438-11	CARBON 56K 5% 1/4W	(EXCEPT B/UB)
R293	1-249-439-11	CARBON 68K 5% 1/4W	(B/UB)
R296	1-249-438-11	CARBON 56K 5% 1/4W	(EXCEPT B/UB)
R296	1-249-439-11	CARBON 68K 5% 1/4W	(B/UB)
R297	1-249-440-11	CARBON 82K 5% 1/4W	(VC/NP/B)
R298	1-249-429-11	CARBON 10K 5% 1/4W	
R299	1-249-437-11	CARBON 47K 5% 1/4W	
R301	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R302	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R303	1-247-891-00	CARBON 330K 5% 1/4W	
R304	1-247-887-00	CARBON 220K 5% 1/4W	
⚠R305	1-249-417-11	CARBON 1K 5% 1/4W	F
⚠R306	1-249-405-11	CARBON 100 5% 1/4W	F
R307	1-249-441-11	CARBON 100K 5% 1/4W	
⚠R308	1-249-417-11	CARBON 1K 5% 1/4W	F
⚠R401	1-249-425-11	CARBON 4.7K 5% 1/4W	F
⚠R402	1-249-425-11	CARBON 4.7K 5% 1/4W	F
⚠R403	1-249-421-11	CARBON 2.2K 5% 1/4W	F

Ref. No.	Part No.	Description	Remarks
R405	1-249-429-11	CARBON 10K 5% 1/4W	
R406	1-249-437-11	CARBON 47K 5% 1/4W	
⚠R407	1-249-417-11	CARBON 1K 5% 1/4W	F
⚠R408	1-249-417-11	CARBON 1K 5% 1/4W	F
⚠R409	1-249-417-11	CARBON 1K 5% 1/4W	F
R410	1-249-429-11	CARBON 10K 5% 1/4W	
R411	1-249-429-11	CARBON 10K 5% 1/4W	
R412	1-249-437-11	CARBON 47K 5% 1/4W	
R413	1-249-436-11	CARBON 39K 5% 1/4W	
R414	1-249-429-11	CARBON 10K 5% 1/4W	
R415	1-249-429-11	CARBON 10K 5% 1/4W	
R416	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R418	1-249-417-11	CARBON 1K 5% 1/4W	F
R419	1-249-436-11	CARBON 39K 5% 1/4W	
R420	1-249-429-11	CARBON 10K 5% 1/4W	
R421	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R422	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R423	1-247-885-00	CARBON 180K 5% 1/4W	
⚠R424	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R425	1-249-439-11	CARBON 68K 5% 1/4W	
R426	1-249-434-11	CARBON 27K 5% 1/4W	
⚠R427	1-249-423-11	CARBON 3.3K 5% 1/4W	F
R428	1-247-705-11	CARBON 270 5% 1/4W	
⚠R429	1-249-427-11	CARBON 6.8K 5% 1/4W	F
⚠R431	1-249-421-11	CARBON 2.2K 5% 1/4W	F
⚠R432	1-249-405-11	CARBON 100 5% 1/4W	F
⚠R433	1-249-417-11	CARBON 1K 5% 1/4W	F
R434	1-249-441-11	CARBON 100K 5% 1/4W	
R435	1-247-901-11	CARBON 820K 5% 1/4W	
R436	1-249-411-11	CARBON 330 5% 1/4W	
R437	1-249-437-11	CARBON 47K 5% 1/4W	
R438	1-249-437-11	CARBON 47K 5% 1/4W	
R439	1-249-439-11	CARBON 68K 5% 1/4W	
⚠R440	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R441	1-249-441-11	CARBON 100K 5% 1/4W	
⚠R442	1-249-417-11	CARBON 1K 5% 1/4W	F
R443	1-215-429-00	METAL 2.2K 1% 1/6W	
R444	1-249-429-11	CARBON 10K 5% 1/4W	
R445	1-249-429-11	CARBON 10K 5% 1/4W	
R446	1-249-435-11	CARBON 33K 5% 1/4W	
⚠R447	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R448	1-215-429-00	METAL 2.2K 1% 1/6W	
R450	1-249-429-11	CARBON 10K 5% 1/4W	(VC/NP/B
R501	1-249-429-11	CARBON 10K 5% 1/4W	(UB)
R502	1-249-429-11	CARBON 10K 5% 1/4W	(UB)
R504	1-249-429-11	CARBON 10K 5% 1/4W	(UB)
R505	1-249-429-11	CARBON 10K 5% 1/4W	(UB)
R506	1-249-429-11	CARBON 10K 5% 1/4W	(UB)
R507	1-249-441-11	CARBON 100K 5% 1/4W	(UB)
R508	1-249-441-11	CARBON 100K 5% 1/4W	(UB)

Note:	**Note:**
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MA-140

Ref. No.	Part No.	Description	Remarks
R509	1-249-441-11	CARBON 100K 5% 1/4W	(EXCEPT UB)
R510	1-249-441-11	CARBON 100K 5% 1/4W	(EXCEPT UB)
⚠R522	1-249-419-11	CARBON 1.5K 5% 1/4W	F(EXCEPT B/UB)
⚠R523	1-249-417-11	CARBON 1K 5% 1/4W	F(EXCEPT B/UB)
⚠R524	1-249-421-11	CARBON 2.2K 5% 1/4W	F
R525	1-247-895-00	CARBON 470K 5% 1/4W	
R526	1-249-437-11	CARBON 47K 5% 1/4W	(UB)
R527	1-249-437-11	CARBON 47K 5% 1/4W	(B/UB)
⚠R528	1-249-417-11	CARBON 1K 5% 1/4W	F(EXCEPT B/UB)
⚠R529	1-249-417-11	CARBON 1K 5% 1/4W	F(EXCEPT B/UB)
⚠R530	1-249-420-11	CARBON 1.8K 5% 1/4W	F(EXCEPT B/UB)
⚠R531	1-249-417-11	CARBON 1K 5% 1/4W	F
⚠R535	1-249-417-11	CARBON 1K 5% 1/4W	F(EXCEPT B)
⚠R536	1-249-417-11	CARBON 1K 5% 1/4W	F(EXCEPT B)
⚠R537	1-249-428-11	CARBON 8.2K 5% 1/4W	F(UB/NP/NC/B)
R538	1-249-430-11	CARBON 12K 5% 1/4W	(UB/NP/NC/B)
⚠R539	1-249-423-11	CARBON 3.3K 5% 1/4W	F (AEP/B/VC)
R540	1-249-433-11	CARBON 22K 5% 1/4W	(AEP/B/VC)
R551	1-249-429-11	CARBON 10K 5% 1/4W	(B/UB)
R552	1-249-429-11	CARBON 10K 5% 1/4W	(B/UB)
R553	1-249-429-11	CARBON 10K 5% 1/4W	(B)
R554	1-249-429-11	CARBON 10K 5% 1/4W	(UB)
R555	1-249-429-11	CARBON 10K 5% 1/4W	(UB)
R556	1-249-429-11	CARBON 10K 5% 1/4W	(UB)
R557	1-249-441-11	CARBON 100K 5% 1/4W	(UB)
R558	1-249-441-11	CARBON 100K 5% 1/4W	(UB)
R559	1-249-441-11	CARBON 100K 5% 1/4W	(B/UB)
R560	1-249-441-11	CARBON 100K 5% 1/4W	(B/UB)
⚠R572	1-249-417-11	CARBON 1K 5% 1/4W	F
⚠R573	1-249-425-11	CARBON 4.7K 5% 1/4W	F(B/UB/NP/NC)
R573	1-249-421-11	CARBON 2.2K 5% 1/4W	(AEP/VC)
⚠R574	1-249-405-11	CARBON 100 5% 1/4W	F
R575	1-249-429-11	CARBON 10K 5% 1/4W	(B/UB/NP/NC)
⚠R575	1-249-425-11	CARBON 4.7K 5% 1/4W	F(AEP/VC)
R580	1-249-429-11	CARBON 10K 5% 1/4W	(UB)
R585	1-249-425-11	CARBON 4.7K 5% 1/4W	F(UB/NP/NC)
R701	1-249-429-11	CARBON 10K 5% 1/4W	
R702	1-249-429-11	CARBON 10K 5% 1/4W	
R703	1-249-429-11	CARBON 10K 5% 1/4W	
⚠R704	1-249-407-11	CARBON 150 5% 1/4W	F
⚠R705	1-249-421-11	CARBON 2.2K 5% 1/4W	F
⚠R706	1-249-428-11	CARBON 8.2K 5% 1/4W	F
R707	1-249-410-11	CARBON 270 5% 1/4W	F
⚠R708	1-249-393-11	CARBON 10 5% 1/4W	F
R710	1-249-436-11	CARBON 39K 5% 1/4W	
⚠R711	1-249-416-11	CARBON 820 5% 1/4W	F
R712	1-247-887-00	CARBON 220K 5% 1/4W	
R713	1-249-411-11	CARBON 330 5% 1/4W	
R714	1-249-429-11	CARBON 10K 5% 1/4W	
R715	1-249-437-11	CARBON 47K 5% 1/4W	
R716	1-249-433-11	CARBON 22K 5% 1/4W	
R717	1-247-903-00	CARBON 1M 5% 1/4W	
⚠R719	1-249-427-11	CARBON 6.8K 5% 1/4W	F
R720	1-249-430-11	CARBON 12K 5% 1/4W	(EXCEPT B/UB)
R720	1-249-433-11	CARBON 22K 5% 1/4W	(B/UB)
⚠R721	1-249-425-11	CARBON 4.7K 5% 1/4W	F(VC/NP/B)
⚠R721	1-249-416-11	CARBON 820 5% 1/4W	F(AE/NC/UB)
R722	1-249-438-11	CARBON 56K 5% 1/4W	
R725	1-249-432-11	CARBON 18K 5% 1/4W	
R729	1-249-426-11	CARBON 5.6K 5% 1/4W	
R730	1-249-433-11	CARBON 22K 5% 1/4W	
⚠R733	1-249-387-11	CARBON 3.3 5% 1/4W	F
R740	1-249-440-11	CARBON 82K 5% 1/4W	(VC/NP/B)
R741	1-249-437-11	CARBON 47K 5% 1/4W	(VC/NP/B)
R742	1-249-437-11	CARBON 47K 5% 1/4W	(VC/NP/B)
R746	1-249-437-11	CARBON 47K 5% 1/4W	(VC/NP/B)
R747	1-249-437-11	CARBON 47K 5% 1/4W	(VC/NP/B)
R750	1-249-429-11	CARBON 10K 5% 1/4W	(VC/NP/B)
R790	1-249-440-11	CARBON 82K 5% 1/4W	(B)

< RF MODULATOR >

Ref. No.	Part No.	Description	Remarks
⚠RF501	1-466-328-11	MODULATOR, RF (RFU-2017)	(EXCEPT B/UB) (RF CHANNEL)
⚠RF501	1-466-347-11	MODULATOR, RF (RFU-2024)	(UB) (RF CHANNEL)
⚠RF501	1-466-348-11	MODULATOR, RF (RFU-2023)	(B) (RF CHANNEL)

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remarks
RV201	1-241-077-11	RES, ADJ, CARBON 2.2K	
RV400	1-241-083-11	RES, ADJ, CARBON 47K	
RV401	1-241-083-11	RES, ADJ, CARBON 47K	
RV501	1-241-079-11	RES, ADJ, CARBON 4.7K	(EXCEPT B/UB)
RV701	1-241-085-11	RES, ADJ, CARBON 220K	

< TRANSFORMER >

Ref. No.	Part No.	Description	Remarks
T701	1-433-352-11	TRANSFORMER, BIAS OSCILLATION	

< TUNER >

Ref. No.	Part No.	Description	Remarks
⚠TU501	1-465-260-11	TUNER, ET (BTP-2C401)	(EXCEPT B/UB)
⚠TU501	1-465-262-11	TUNER, ET	(UB/B)

< VIBRATOR >

Ref. No.	Part No.	Description	Remarks
X401	1-578-774-11	VIBRATOR, CRYSTAL 12MHz	
X501	1-567-925-11	VIBRATOR, CRYSTAL 10MHz	(EXCEPT B/UB)

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Note:	**Note:**
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Ref. No.	Part No.	Description				Remarks
*	A-6754-435-A	MD-58 BOARD, COMPLETE				

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(Ref. No. 10000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description				Remarks
C001	1-161-494-00	CERAMIC	0.022uF		25V	
C002	1-161-494-00	CERAMIC	0.022uF		25V	
C003	1-126-157-11	ELECT	10uF	20%	16V	
C004	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C006	1-124-589-11	ELECT	47uF	20%	16V	
C008	1-164-159-11	CERAMIC	0.1uF		50V	
C009	1-164-159-11	CERAMIC	0.1uF		50V	
C025	1-162-294-31	CERAMIC	0.001uF	10%	50V	
C026	1-162-294-31	CERAMIC	0.001uF	10%	50V	

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
CN002	1-569-335-11	CONNECTOR, BOARD TO BOARD 9P	
CN003	1-691-643-11	CONNECTOR, BOARD TO BOARD 5P	
CN004	1-569-341-11	CONNECTOR, BOARD TO BOARD 19P	
CN005	1-506-482-11	PIN, CONNECTOR 3P	
CN006	1-569-333-11	CONNECTOR, BOARD TO BOARD 3P	
CN007	1-569-340-11	CONNECTOR, BOARD TO BOARD 11P	

< DIODE >

Ref. No.	Part No.	Description		Remarks
D001	8-719-985-00	DIODE	GL451VS1	
D004	8-719-109-93	DIODE	RD6.2ES-B2	
D005	8-719-109-93	DIODE	RD6.2ES-B2	
D006	8-719-109-93	DIODE	RD6.2ES-B2	
D007	8-719-109-93	DIODE	RD6.2ES-B2	

< IC >

Ref. No.	Part No.	Description		Remarks
IC002	8-759-912-77	IC	uPC324C	

< PHOTO INTERUPTER >

Ref. No.	Part No.	Description		Remarks
PH001	8-759-144-33	IC	PS6002	
PH002	8-759-144-33	IC	PS6002	

< TRANSISTOR >

Ref. No.	Part No.	Description		Remarks
Q001	8-729-926-31	TRANSISTOR	PT483F1S	
Q002	8-729-926-31	TRANSISTOR	PT483F1S	

< RESISTOR >

Ref. No.	Part No.	Description				Remarks
⚠R001	1-249-423-11	CARBON	3.3K	5%	1/4W	F
⚠R002	1-249-423-11	CARBON	3.3K	5%	1/4W	F
R003	1-249-426-11	CARBON	5.6K	5%	1/4W	
R004	1-249-426-11	CARBON	5.6K	5%	1/4W	
⚠R005	1-249-417-11	CARBON	1K	5%	1/4W	F
R006	1-249-441-11	CARBON	100K	5%	1/4W	
R007	1-249-441-11	CARBON	100K	5%	1/4W	
⚠R008	1-249-425-11	CARBON	4.7K	5%	1/4W	F
⚠R009	1-249-408-11	CARBON	180	5%	1/4W	F
⚠R010	1-249-422-11	CARBON	2.7K	5%	1/4W	F
R011	1-249-437-11	CARBON	47K	5%	1/4W	
⚠R012	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R015	1-249-437-11	CARBON	47K	5%	1/4W	
⚠R016	1-249-421-11	CARBON	2.2K	5%	1/4W	F
R017	1-249-429-11	CARBON	10K	5%	1/4W	
R018	1-249-429-11	CARBON	10K	5%	1/4W	
R019	1-249-429-11	CARBON	10K	5%	1/4W	
R020	1-249-429-11	CARBON	10K	5%	1/4W	
⚠R023	1-249-414-11	CARBON	560	5%	1/4W	F

< SWITCH >

Ref. No.	Part No.	Description	Remarks
S001	1-570-953-11	SWITCH, PUSH (1 KEY)	
S002	1-570-953-11	SWITCH, PUSH (1 KEY)	

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Ref. No.	Part No.	Description	Remarks
*	A-6721-466-A	MF-167 BOARD, COMPLETE (AEP)	
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*	A-6721-499-A	MF-167 BOARD, COMPLETE (UB)	
		****************************	
*	A-6721-476-A	MF-167 BOARD, COMPLETE (NC)	
		****************************	
*	A-6721-477-A	MF-167 BOARD, COMPLETE (NP)	
		****************************	
*	A-6721-479-A	MF-167 BOARD, COMPLETE (VC)	
		****************************	
*	A-6721-513-A	MF-167 BOARD, COMPLETE (B)	
		****************************	

(Ref. No. 16000 Series)

Ref. No.	Part No.	Description	Remarks
	3-738-216-01	COVER, VOLUME	
*	3-948-157-01	HOLDER, FL	

< BUZZER >

Ref. No.	Part No.	Description	Remarks
BZ601	1-529-080-11	BUZZER, PIEZOELECTRIC	

< CAPACITOR >

Ref. No.	Part No.	Description				Remarks
C601	1-126-096-11	ELECT	10uF	20%	35V	
C602	1-124-472-11	ELECT	470uF	20%	10V	
C603	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C604	1-125-705-11	CAP, DOUBLE LAYEYERS			0.22F	
C605	1-126-096-11	ELECT	10uF	20%	35V	
C607	1-161-379-00	CERAMIC	0.01uF	20%	25V	
C608	1-162-219-31	CERAMIC	68PF	5%	50V	
C609	1-124-584-00	ELECT	100uF	20%	10V	
C611	1-126-160-11	ELECT	1uF	20%	50V	
C612	1-161-379-00	CERAMIC	0.01uF	30%	25V	

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MF-167

Ref. No.	Part No.	Description	Remarks
C613	1-161-494-00	CERAMIC 0.022uF 25V	
C614	1-162-306-11	CERAMIC 0.01uF 20% 16V	
		< CONNECTOR >	
CN601	1-568-081-11	CONNECTOR (RECEPTALE) 24P (EXCEPT B/UB/VC)	
CN601	1-568-079-11	CONNECTOR (RECEPTALE) 20P (B/UB/VC)	
CN602	1-568-081-11	CONNECTOR (RECEPTALE) 24P	
* CN603	1-573-387-11	CONNECTOR, BOARD TO BOARD 12P	
CN604	1-568-673-11	CONNECTOR, BOARD TO BOARD 14P	
CN605	1-563-597-11	CONNECTOR, FLEXIBLE 20P (EXCEPT B/UB/VC)	
CN605	1-563-593-11	CONNECTOR, FLEXIBLE 16P (B/UB/VC)	
		< VARIABLE CAPACITOR >	
CV601	1-141-291-11	CAP, TRIMMER (EXCEPT B/UB/VC)	
CV601	1-141-227-00	CAP, TRIMMER 20PF (B/UB/VC)	
		< DIODE >	
D601	8-719-110-08	DIODE RD8.2ES-B2	
D602	8-719-911-19	DIODE 1SS119 (EXCEPT B/UB/VC)	
D602	8-719-200-82	DIODE 11ES2 (B/UB/VC)	
D603	8-719-911-19	DIODE 1SS119	
D604	8-719-911-19	DIODE 1SS119	
D605	8-719-911-19	DIODE 1SS119 (EXCEPT B/UB/VC)	
D605	8-719-200-82	DIODE 11ES2 (B/UB/VC)	
D610	8-719-911-19	DIODE 1SS119	
D611	8-719-911-19	DIODE 1SS119	
D612	8-719-911-19	DIODE 1SS119	
D613	8-719-911-19	DIODE 1SS119	
D614	8-719-911-19	DIODE 1SS119	
D615	8-719-911-19	DIODE 1SS119	
D616	8-719-109-93	DIODE RD6.2ES-B2	
D617	8-719-940-88	DIODE SLR-34UC3 (EXCEPT B/UB/VC)	
D617	8-719-946-30	DIODE SLR34DC3 (B/UB/VC)	
D618	8-719-940-82	DIODE SLR34MC3	
D619	8-719-940-99	DIODE SLR34VC3	
D620	8-719-940-99	DIODE SLR34VC3	
		< IC >	
IC601	8-759-078-00	IC MB89796B-VSX1760 (AEP/UB/NC/NP)	
IC601	8-759-094-10	IC MB89796B-104 (B/VC)	
IC602	8-759-748-54	IC CAT35C202P	
IC603	8-759-515-58	IC PST572H (EXCEPT B/UB)	
IC603	8-759-520-98	IC PST572K-T (B/UB)	
IC604	8-759-510-43	IC PST572C	
IC605	1-466-131-21	IC GP1U52X	

Ref. No.	Part No.	Description	Remarks
		< COIL >	
L601	1-410-361-21	INDUCTOR 12uH	
L602	1-410-501-11	INDUCTOR 2.2uH (EXCEPT B/UB/VC)	
L602	1-408-401-00	INDUCTOR 2.2uH (B/UB/VC)	
L604	1-410-517-11	INDUCTOR 47uH	
L605	1-410-501-11	INDUCTOR 2.2uH	
L607	1-410-336-11	INDUCTOR 220uH	
L609	1-410-501-11	INDUCTOR 2.2uH	
L610	1-410-501-11	INDUCTOR 2.2uH	
		< LIQUID CRYSTAL DISPLAY >	
LCD601	1-519-507-41	INDICATOR TUBE, FLUORESCENT	
		< TRANSISTOR >	
Q601	8-729-900-89	TRANSISTOR DTC144ES	
Q602	8-729-900-89	TRANSISTOR DTC144ES	
Q603	8-729-900-80	TRANSISTOR DTC114ES	
Q604	8-729-900-80	TRANSISTOR DTC114ES	
Q605	8-729-900-80	TRANSISTOR DTC114ES	
Q606	8-729-900-80	TRANSISTOR DTC114ES	
Q608	8-729-900-80	TRANSISTOR DTC114ES (VC)	
		< RESISTOR >	
R601	1-249-435-11	CARBON 33K 5% 1/4W	
⚠R602	1-249-393-11	CARBON 10 5% 1/4W F	
R603	1-249-440-11	CARBON 82K 5% 1/4W	
R604	1-249-441-11	CARBON 100K 5% 1/4W	
R605	1-249-429-11	CARBON 10K 5% 1/4W	
R607	1-249-437-11	CARBON 47K 5% 1/4W	
⚠R608	1-249-425-11	CARBON 4.7K 5% 1/4W F (VC)	
R609	1-249-429-11	CARBON 10K 5% 1/4W (EXCEPT B/UB)	
⚠R609	1-249-425-11	CARBON 4.7K 5% 1/4W F(B/UB)	
R610	1-249-429-11	CARBON 10K 5% 1/4W	
R617	1-249-404-00	CARBON 82 5% 1/4W	
⚠R618	1-249-407-11	CARBON 150 5% 1/4W F	
⚠R619	1-249-409-11	CARBON 220 5% 1/4W F	
⚠R620	1-249-409-11	CARBON 220 5% 1/4W F	
⚠R622	1-249-405-11	CARBON 100 5% 1/4W F	
R623	1-249-429-11	CARBON 10K 5% 1/4W	
R624	1-249-429-11	CARBON 10K 5% 1/4W	
R625	1-249-429-11	CARBON 10K 5% 1/4W	
R626	1-249-429-11	CARBON 10K 5% 1/4W	
R627	1-249-429-11	CARBON 10K 5% 1/4W	
R628	1-249-429-11	CARBON 10K 5% 1/4W	
R629	1-249-429-11	CARBON 10K 5% 1/4W	
R630	1-249-429-11	CARBON 10K 5% 1/4W	
R653	1-249-437-11	CARBON 47K 5% 1/4W (AEP/B/NC/NP)	
R654	1-249-437-11	CARBON 47K 5% 1/4W (NC/VC)	

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.	Description	Remarks
R655	1-249-437-11	CARBON 47K 5% 1/4W	(NP)
R662	1-249-417-11	CARBON 1K 5% 1/4W	F
R664	1-249-417-11	CARBON 1K 5% 1/4W	F
R670	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R671	1-249-425-11	CARBON 4.7K 5% 1/4W	F
R698	1-249-433-11	CARBON 22K 5% 1/4W	(B)
R699	1-249-437-11	CARBON 47K 5% 1/4W	
		< VARIABLE RESISTOR >	
RV601	1-241-358-11	RES, VAR, CARBON 20K (LEFT)	
RV602	1-241-358-11	RES, VAR, CARBON 20K (RIGHT)	
RV603	1-230-522-11	RES, ADJ, METAL 4.7K	(EXCEPT B/UB)
RV603	1-230-523-11	RES, ADJ, METAL 10K	(B/UB)
RV604	1-230-523-11	RES, ADJ, METAL 10K	(B/UB)
RV604	1-230-522-11	RES, ADJ, METAL 4.7K	(EXCEPT B/UB)
		< VIBRATOR >	
X601	1-567-098-00	OSCILLATOR, CRYSTAL 32.768kHz	
X602	1-577-157-11	VIBRATOR, CERAMIC	(EXCEPT B/UB)
X602	1-579-125-11	VIBRATOR, CERAMIC	(B/UB)

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Ref. No.	Part No.	Description	Remarks
*	A-6755-466-A	MF-168 BOARD, COMPLETE	(EXCEPT UB)
		**********************************	
*	A-6755-660-A	MF-168 BOARD, COMPLETE	(UB)
		**************************	
			(Ref. No. 11000 Series)
	4-352-844-01	PIN, LEAD, COATING	(UB)
	3-950-546-01	HOLDER, LED	
		< CAPACITOR >	
C201	1-126-160-11	ELECT 1uF 20% 50V	
C202	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C203	1-163-017-00	CERAMIC CHIP 0.0047uF 5% 50V	
C204	1-126-163-11	ELECT 4.7uF 20% 50V	(EXCEPT B/UB)
C204	1-124-589-11	ELECT 47uF 20% 16V	(B/UB)
C205	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C206	1-126-157-11	ELECT 10uF 20% 16V	
C207	1-163-105-00	CERAMIC CHIP 33PF 5% 50V	
C208	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C209	1-124-589-11	ELECT 47uF 20% 16V	
		< CONNECTOR >	
CN201	1-568-667-11	CONNECTOR, BOARD TO BOARD 14P	
CN202	1-563-584-11	CONNECTOR, FLEXIBLE 7P	(EXCEPT B/UB)
CN202	1-563-587-11	CONNECTOR, FLEXIBLE 10P	(B/UB)
CN203	1-695-309-11	CONNECTOR, BOARD TO BOARD 11P	
CN204	1-506-487-11	PIN, CONNECTOR 8P	

Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D201	8-719-955-04	LED PY5504S-1	(EXCEPT B/UB)
D201	8-719-988-92	LED BRPG5014X-K	(B/UB)
D202	8-719-988-92	LED BRPG5014X-K	(B/UB)
D202	8-719-955-04	LED PY5504S-1	(EXCEPT B/UB)
		< IC >	
IC201	8-759-923-90	IC BA4560	(EXCEPT B/UB)
IC201	8-759-924-46	IC BA4560F	(B/UB)
IC202	8-759-032-32	IC MC74HC132AF	
		< JUMPER RESISTOR >	
JR201	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT UB)
JR202	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT UB)
JR230	1-216-295-00	METAL CHIP 0 5% 1/10W	(B/UB)
JR232	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR233	1-216-295-00	METAL CHIP 0 5% 1/10W	
		< COIL >	
L201	1-410-521-11	INDUCTOR 100uH	
		< TRANSISTOR >	
Q201	8-729-230-49	TRANSISTOR 2SC2712-G	
Q202	8-729-421-19	TRANSISTOR UN2213	
Q203	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q204	8-729-140-75	TRANSISTOR 2SD999-CLCK	
Q240	8-729-230-49	TRANSISTOR 2SC2712-G	
		< RESISTOR >	
R201	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R203	1-216-295-00	METAL CHIP 0 5% 1/10W	
R205	1-216-029-00	METAL CHIP 150 5% 1/10W	
R206	1-216-029-00	METAL CHIP 150 5% 1/10W	
R207	1-216-029-00	METAL CHIP 150 5% 1/10W	
R208	1-216-029-00	METAL CHIP 150 5% 1/10W	
R209	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R210	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R211	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R212	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R213	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R214	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R215	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R216	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R217	1-216-041-00	METAL CHIP 470 5% 1/10W	
R218	1-216-001-00	METAL CHIP 10 5% 1/10W	(EXCEPT UB)
R219	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(EXCEPT UB)
R220	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R221	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R223	1-216-031-00	METAL CHIP 180 5% 1/10W	(EXCEPT B/UB)
R223	1-216-025-00	METAL CHIP 100 5% 1/10W	(B/UB)
R224	1-216-027-00	METAL CHIP 120 5% 1/10W	(B/UB)
R224	1-216-029-00	METAL CHIP 150 5% 1/10W	(EXCEPT B/UB)
R225	1-216-023-00	METAL CHIP 82 5% 1/10W	(EXCEPT B/UB)
R225	1-216-033-00	METAL CHIP 220 5% 1/10W	(B/UB)
R226	1-216-027-00	METAL CHIP 120 5% 1/10W	(B/UB)
R226	1-216-029-00	METAL CHIP 150 5% 1/10W	(EXCEPT B/UB)
R241	1-216-049-00	METAL CHIP 1K 5% 1/10W	

< SWITCH >

S201	1-571-977-11	SWITCH, TACTIL	(ON/STANDBY)
S202	1-571-300-21	SWITCH, ROTARY	

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* A-6755-463-A MF-169 BOARD, COMPLETE (EXCEPT B/UB)

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* A-6755-667-A MF-169 BOARD, COMPLETE (UB)

****

* A-6755-811-A MF-169 BOARD, COMPLETE (B)

****

(Ref. No. 12000 Series)

< CONNECTOR >

CN401	1-568-671-11	CONNECTOR, BOARD TO BOARD 11P	(EXCEPT B/UB)
CN401	1-568-668-11	CONNECTOR, BOARD TO BOARD 6P	(B/UB)
CN402	1-563-619-21	CONNECTOR, FLEXIBLE 16P	(B/UB)
CN402	1-563-623-11	CONNECTOR, FLEXIBLE 20P	(EXCEPT B/UB)

< JUMPER RESISTOR >

JR401	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR402	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR403	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR404	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR405	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR406	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT UB)
JR409	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT UB)
JW004	1-216-296-00	METAL CHIP 0 5% 1/8W	(EXCEPT UB)
JW013	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT UB)
JW085	1-216-296-00	METAL CHIP 0 5% 1/8W	(EXCEPT UB)
JW087	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT UB)
JW088	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT UB)
JW089	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT UB)

< RESISTOR >

R401	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R402	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	(B/UB)
R402	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	(EXCEPT B/UB)
R403	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R404	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R405	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R406	1-216-041-00	METAL CHIP 470 5% 1/10W	
R407	1-216-041-00	METAL CHIP 470 5% 1/10W	
R408	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R409	1-216-073-00	METAL CHIP 10K 5% 1/10W	(B)

< TRANSISTOR >

Q401	8-729-421-19	TRANSISTOR UN2213-TX	(B)
Q402	8-729-421-19	TRANSISTOR UN2213-TX	(B)

< VARIABLE RESISTOR >

RV401	1-241-061-11	RES, VAR, CARBON 2K	(SHARPNESS)
RV402	1-238-420-11	RES, VAR, CARBON 10K	(PHONE LEVEL)

< SWITCH >

S401	1-572-907-11	SWITCH, SLIDE	(COMMAND MODE)
S402	1-570-847-11	SWITCH, SLIDE	(B)
S403	1-570-836-11	SWITCH, SLIDE	(B)
S404	1-572-908-11	SWITCH, SLIDE	(NTSC PB ON PAL TV)
S405	1-571-977-11	SWITCH, TACTIL	(CL)

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* A-6755-467-A MF-170 BOARD, COMPLETE (EXCEPT UB)

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* A-6755-668-A MF-170 BOARD, COMPLETE (UB)

****

(Ref. No. 13000 Series)

< CAPACITOR >

C300	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C302	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C303	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C304	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C306	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C308	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C310	1-136-015-00	CERAMIC CHIP 0.0033uF 50V	
C311	1-136-015-00	CERAMIC CHIP 0.0033uF 50V	
C313	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C314	1-136-015-00	CERAMIC CHIP 0.0033uF 50V	

< CONNECTOR >

CN301	1-563-610-11	CONNECTOR, FLEXIBLE 7P	(EXCEPT B/UB)
CN301	1-563-613-21	CONNECTOR, FLEXIBLE 10P	(B/UB)
CN302	1-568-662-11	CONNECTOR, BOARD TO BOARD 6P	(B/UB)
CN302	1-568-665-11	CONNECTOR, BOARD TO BOARD 11P	(EXCEPT B/UB)
CN303	1-506-468-11	PIN, CONNECTOR 3P	(B/UB)

< JACK >

Ref. No.	Part No.	Description				Remarks
CNJ301	0-479-451-00	JACK (MIC) (EXCEPT B/UB)				
CNJ301	1-695-312-11	JACK (SMALL TYPE)(MONO)(MIC) (B/UB)				
CNJ302	1-565-735-21	JACK, PIN 3P (PHONES)				
CNJ303	1-565-669-21	JACK, SMALL TYPE (LINE-2)				
CNJ304	1-568-800-11	JACK, ULTRA SMALL (CONTROL L)				

< DIODE >

Ref. No.	Part No.	Description				Remarks
D301	8-719-109-93	DIODE	RD6. 2ES-B2			
D302	8-719-109-93	DIODE	RD6. 2ES-B2			
D303	8-719-109-93	DIODE	RD6. 2ES-B2			
D321	8-719-109-93	DIODE	RD6. 2ES-B2			

< JUMPER RESISTOR >

Ref. No.	Part No.	Description				Remarks
JR301	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR302	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR303	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR311	1-216-295-00	METAL CHIP	0	5%	1/10W	

< COIL >

Ref. No.	Part No.	Description				Remarks
L301	1-410-336-11	INDUCTOR	220uH			
L302	1-410-336-11	INDUCTOR	220uH			
L303	1-410-336-11	INDUCTOR	220uH			
L304	1-410-336-11	INDUCTOR	220uH			

< TRANSISTOR >

Ref. No.	Part No.	Description				Remarks
Q321	8-729-140-75	TRANSISTOR	2SD999-CLCK			
Q322	8-729-140-75	TRANSISTOR	2SD999-CLCK			

< RESISTOR >

Ref. No.	Part No.	Description				Remarks
R301	1-216-022-00	METAL CHIP	75	5%	1/10W	
R302	1-216-295-00	METAL CHIP	0	5%	1/10W	
R303	1-216-295-00	METAL CHIP	0	5%	1/10W	
R304	1-216-295-00	METAL CHIP	0	5%	1/10W	
R321	1-216-001-00	METAL CHIP	10	5%	1/10W	
R322	1-216-051-00	METAL CHIP	1. 2K	5%	1/10W	

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Ref. No.	Part No.	Description	Remarks
*	A-6727-417-A	RP-147 BOARD, COMPLETE (EXCEPT UB)	
		**********************************	
*	A-6727-459-A	RP-147 BOARD, COMPLETE (UB)	
		***************************	
*	A-6727-467-A	RP-147 BOARD, COMPLETE (B)	
		**************************	

(Ref. No. 1000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description				Remarks
C201	1-126-157-11	ELECT	10uF	20%	16V	
C202	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C260	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C261	1-124-584-00	ELECT	100uF	20%	10V	
C262	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C263	1-163-038-00	CERAMIC CHIP	0. 1uF		25V	
C264	1-124-257-00	ELECT	2. 2uF	20%	50V	
C265	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C267	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C268	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C269	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C270	1-163-038-00	CERAMIC CHIP	0. 1uF		25V	
C273	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C274	1-163-038-00	CERAMIC CHIP	0. 1uF		25V	
C275	1-126-160-11	ELECT	1uF	20%	50V	
C276	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C277	1-137-398-91	FILM	0. 068uF	5%	100V	
C279	1-163-986-00	CERAMIC CHIP	0. 027uF	10%	25V	
C280	1-163-011-11	CERAMIC CHIP	0. 0015uF	10%	50V	
C281	1-124-589-11	ELECT	47uF	20%	16V	
C286	1-164-232-11	CERAMIC CHIP	0. 01uF		50V	
C701	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C703	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C704	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C705	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C706	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C707	1-124-257-00	ELECT	2. 2uF	20%	50V	
C708	1-163-035-00	CERAMIC CHIP	0. 047uF		50V	
C709	1-163-031-11	CERAMIC CHIP	0. 01uF		50V	
C710	1-126-233-11	ELECT	22uF	20%	50V	
C801	1-163-033-00	CERAMIC CHIP	0. 022uF		50V	
C802	1-163-033-00	CERAMIC CHIP	0. 022uF		50V	
C803	1-163-033-00	CERAMIC CHIP	0. 022uF		50V	
C804	1-163-038-00	CERAMIC CHIP	0. 1uF		25V	
C805	1-163-033-00	CERAMIC CHIP	0. 022uF		50V	
C806	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C807	1-163-038-00	CERAMIC CHIP	0. 1uF		25V	
C808	1-124-584-00	ELECT	100uF	20%	10V	
C809	1-163-038-00	CERAMIC CHIP	0. 1uF		25V	
C810	1-124-584-00	ELECT	100uF	20%	10V	

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Ref. No.	Part No.	Description				Remarks
C811	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C812	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C813	1-164-336-11	CERAMIC CHIP	0.33uF		25V	
C814	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C815	1-163-077-00	CERAMIC CHIP	0.1uF	10%	25V	
C816	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C817	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V	
C818	1-163-107-00	CERAMIC CHIP	39PF	5%	50V	
C819	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C820	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C821	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C822	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	
C823	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C824	1-124-126-00	ELECT	47uF	20%	10V	
C826	1-124-589-11	ELECT	47uF	20%	16V	
C827	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C828	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C829	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C830	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C831	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C833	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C834	1-163-087-00	CERAMIC CHIP	4PF		50V	(B)
C834	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	(EXCEPT B)
C835	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C836	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C839	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C840	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C881	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C882	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C883	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C884	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	
C890	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C892	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C893	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C894	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C895	1-163-245-11	CERAMIC CHIP	56PF	5%	50V	
C896	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C897	1-126-157-11	ELECT	10uF	20%	16V	
C902	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	(B)

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
CN260	1-506-482-11	PIN, CONNECTOR 3P	
* CN801	1-563-590-11	CONNECTOR, FLEXIBLE 13P	
CN802	1-569-338-11	CONNECTOR, BOARD TO BOARD 19P	
* CN803	1-564-031-00	PIN, CONNECTOR 6P	
* CN804	1-564-018-51	PIN, CONNECTOR 8P	

< DIODE >

Ref. No.	Part No.	Description		Remarks
D790	8-719-911-19	DIODE	1SS119	
D791	8-719-911-19	DIODE	1SS119	
D801	8-719-911-19	DIODE	1SS119	
D802	8-719-911-19	DIODE	1SS119	
D803	8-719-911-19	DIODE	1SS119	
D805	8-719-911-19	DIODE	1SS119	
D806	8-719-400-18	DIODE	MA152WK	
D807	8-719-911-19	DIODE	1SS119	
D899	8-719-911-19	DIODE	1SS119	

< IC >

Ref. No.	Part No.	Description		Remarks
IC260	8-759-055-49	IC	AN3327K	
IC801	8-759-046-75	IC	HA118162NT	

< JUMPER RESISTOR >

Ref. No.	Part No.	Description				Remarks
JR067	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR401	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR402	1-216-296-00	METAL CHIP	0	5%	1/8W	(EXCEPT UB)
JR403	1-216-296-00	METAL CHIP	0	5%	1/8W	(EXCEPT UB)
JR404	1-216-296-00	METAL CHIP	0	5%	1/8W	(EXCEPT UB)
JR405	1-216-296-00	METAL CHIP	0	5%	1/8W	(EXCEPT UB)
JR406	1-216-296-00	METAL CHIP	0	5%	1/8W	
JR407	1-216-295-00	METAL CHIP	0	5%	1/10W	
JR801	1-216-296-00	METAL CHIP	0	5%	1/8W	(EXCEPT UB)

< COIL >

Ref. No.	Part No.	Description		Remarks
L201	1-410-509-11	INDUCTOR	10uH	
L260	1-410-521-11	INDUCTOR	100uH	
L265	1-408-426-00	INDUCTOR	270uH	
L701	1-410-521-11	INDUCTOR	100uH	
L702	1-410-519-11	INDUCTOR	68uH	
L801	1-410-521-11	INDUCTOR	100uH	(B)
L802	1-410-521-11	INDUCTOR	100uH	
L803	1-410-521-11	INDUCTOR	100uH	
L804	1-410-521-11	INDUCTOR	100uH	
L805	1-410-514-11	INDUCTOR	27uH	
L806	1-410-515-11	INDUCTOR	33uH	(B)
L806	1-410-512-11	INDUCTOR	18uH	(EXCEPT B)
L807	1-410-516-11	INDUCTOR	39uH	
L808	1-410-509-11	INDUCTOR	10uH	
L809	1-410-512-11	INDUCTOR	18uH	
L810	1-410-524-41	INDUCTOR	180uH	
L811	1-410-521-11	INDUCTOR	100uH	
L812	1-410-521-11	INDUCTOR	100uH	
L813	1-410-509-11	INDUCTOR	10uH	
L814	1-410-509-11	INDUCTOR	10uH	
L890	1-410-507-11	INDUCTOR	6.8uH	
L891	1-410-521-11	INDUCTOR	100uH	
L902	1-410-524-41	INDUCTOT	180uH	(B)

< TRANSISTOR >

Ref. No.	Part No.	Description	Remarks
Q201	8-729-140-97	TRANSISTOR 2SB734-34	
Q260	8-729-103-72	TRANSISTOR 2SD1005-BV	
Q701	8-729-422-28	TRANSISTOR 2SD601A-R	
Q703	8-729-422-28	TRANSISTOR 2SD601A-R	
Q705	8-729-422-37	TRANSISTOR 2SB709A-R	
Q706	8-729-421-19	TRANSISTOR UN2213	
Q707	8-729-422-28	TRANSISTOR 2SD601A-R	
Q801	8-729-422-28	TRANSISTOR 2SD601A-R	
Q802	8-729-422-28	TRANSISTOR 2SD601A-R	
Q803	8-729-424-18	TRANSISTOR UN2113	
Q804	8-729-422-28	TRANSISTOR 2SD601A-R	
Q805	8-729-422-37	TRANSISTOR 2SB709A-R	
Q806	8-729-422-37	TRANSISTOR 2SB709A-R	
Q807	8-729-422-28	TRANSISTOR 2SD601A-R	
Q808	8-729-901-01	TRANSISTOR DTC144EK	
Q809	8-729-422-28	TRANSISTOR 2SD601A-R	
Q810	8-729-901-47	TRANSISTOR DTA143EK	
Q811	8-729-301-98	TRANSISTOR 2SB1000A-L	
Q813	8-729-424-18	TRANSISTOR UN2113	
Q814	8-729-421-19	TRANSISTOR UN2213	
Q890	8-729-216-22	TRANSISTOR 2SA1162	
Q891	8-729-216-22	TRANSISTOR 2SA1162	
Q892	8-729-421-19	TRANSISTOR UN2213	

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R201	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R202	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R262	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R263	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R265	1-216-033-00	METAL CHIP 220 5% 1/10W	
R266	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R267	1-216-025-00	METAL CHIP 100 5% 1/10W	
R272	1-216-073-00	METAL CHIP 10K 5% 1/10W	
⚠R273	1-249-387-11	CARBON 3.3 5% 1/4W	F
R275	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R701	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R702	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R703	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R704	1-216-033-00	METAL CHIP 220 5% 1/10W	
R705	1-216-045-00	METAL CHIP 680 5% 1/10W	
R706	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R707	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R708	1-216-041-00	METAL CHIP 470 5% 1/10W	
R709	1-216-033-00	METAL CHIP 220 5% 1/10W	
R710	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R711	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R712	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R713	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R714	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R801	1-216-029-00	METAL CHIP 150 5% 1/10W	
R802	1-216-037-00	METAL CHIP 330 5% 1/10W	
R803	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R804	1-216-626-11	METAL CHIP 91 1% 1/10W	
R805	1-216-613-11	METAL CHIP 27 0.5% 1/10W	
R806	1-216-029-00	METAL CHIP 150 5% 1/10W	
R807	1-216-029-00	METAL CHIP 150 5% 1/10W	
R808	1-216-615-11	METAL CHIP 33 0.5% 1/10W	
R809	1-216-621-11	METAL CHIP 56 0.50% 1/10W	
R810	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R811	1-216-037-00	METAL CHIP 330 5% 1/10W	
R812	1-216-029-00	METAL CHIP 150 5% 1/10W	
R813	1-216-047-00	METAL CHIP 820 5% 1/10W	
R815	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R816	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R817	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R818	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R819	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R820	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R821	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R822	1-216-039-00	METAL CHIP 390 5% 1/10W	
R823	1-216-047-00	METAL CHIP 820 5% 1/10W	
R824	1-216-039-00	METAL CHIP 390 5% 1/10W	
R825	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R826	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R827	1-216-045-00	METAL CHIP 680 5% 1/10W	
R828	1-216-043-00	METAL CHIP 560 5% 1/10W	
R829	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R829	1-216-041-00	METAL CHIP 470 5% 1/10W	(EXCEPT B)
R830	1-216-047-00	METAL CHIP 820 5% 1/10W	(EXCEPT B)
R830	1-216-041-00	METAL CHIP 470 5% 1/10W	(B)
R831	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R832	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R833	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R834	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R835	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R836	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R838	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R839	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R891	1-216-011-00	METAL CHIP 27 5% 1/10W	
R894	1-216-041-00	METAL CHIP 470 5% 1/10W	
R895	1-216-054-00	METAL CHIP 1.6K 5% 1/10W	
R896	1-216-095-00	METAL CHIP 82K 5% 1/10W	
R897	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R898	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R899	1-249-433-11	CARBON 22K 5% 1/4W	

Note:	Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

RP-147 TK-17 TK-18 VI-116

Ref. No.	Part No.	Description	Remarks
		< TRANSFORMER >	
T260	1-406-349-11	TRANSFORMER, OSCILLATION	
		**	
*	1-644-856-14	TK-17 BOARD COMPLETE	
		********************	
			(Ref. No. 14000 Series)
		< CONNECTOR >	
* CN150	1-573-386-11	CONNECTOR, BOARD TO BOARD 12P	
* CN151	1-562-882-11	SOCKET, CONNECTOR 12P	
		**	
		TK-18 BOARD, COMPLETE	
		********************	
			(Ref. No. 15000 Series)
*	1-644-857-11	TK-18 BOARD	
		< CONNECTOR >	
CN250	1-695-310-11	CONNECTOR, BOARD TO BOARD 11P	
* CN251	1-562-882-11	SOCKET, CONNECTOR 12P	
		**	
*	A-6755-469-A	VI-116 BOARD, COMPLETE (AEP/NC)	
		********************************	
*	A-6755-670-A	VI-116 BOARD, COMPLETE (UB)	
		****************************	
*	A-6755-569-A	VI-116 BOARD, COMPLETE (NP/VC)	
		*******************************	
*	A-6755-812-A	VI-116 BOARD, COMPLETE (B)	
		***************************	
			(Ref. No. 3000 Series)
		< CAPACITOR >	
C501	1-124-126-00	ELECT 47uF 20% 10V	
C502	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C503	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C504	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C505	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C506	1-124-126-00	ELECT 47uF 20% 10V	
C507	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C508	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C509	1-124-907-11	ELECT 10uF 20% 50V	
C510	1-124-907-11	ELECT 10uF 20% 50V	(EXCEPT B)
C511	1-124-907-11	ELECT 10uF 20% 50V	
C512	1-124-907-11	ELECT 10uF 20% 50V	
C513	1-124-907-11	ELECT 10uF 20% 50V	
C514	1-124-907-11	ELECT 10uF 20% 50V	
C515	1-124-907-11	ELECT 10uF 20% 50V	
C516	1-124-907-11	ELECT 10uF 20% 50V	
C517	1-124-907-11	ELECT 10uF 20% 50V	
C518	1-163-093-00	CERAMIC CHIP 10PF 5% 50V	(EXCEPT B)
C519	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(EXCEPT B)
C520	1-163-125-00	CERAMIC CHIP 220PF 5% 50V	(EXCEPT B)
C521	1-163-029-11	CERAMIC CHIP 0.0047uF 50V	
C522	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C523	1-124-927-11	ELECT 4.7uF 20% 100V	
C524	1-124-907-11	ELECT 10uF 20% 50V	
C525	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C527	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(B)
C551	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C552	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C554	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C556	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C557	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C558	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(B/NP/VC)
C559	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(EXCEPT B)
C560	1-124-907-11	ELECT 10uF 20% 50V	
C561	1-124-907-11	ELECT 10uF 20% 50V	
C562	1-124-927-11	ELECT 4.7uF 20% 100V	
C568	1-124-907-11	ELECT 10uF 20% 50V	
C569	1-124-907-11	ELECT 10uF 20% 50V	
C570	1-124-907-11	ELECT 10uF 20% 50V	
C571	1-124-907-11	ELECT 10uF 20% 50V	
C572	1-124-907-11	ELECT 10uF 20% 50V	(B/NP/VC)
C573	1-124-907-11	ELECT 10uF 20% 50V	(B/NP/VC)
C574	1-124-907-11	ELECT 10uF 20% 50V	(EXCEPT B)
C575	1-124-907-11	ELECT 10uF 20% 50V	(EXCEPT B)
C576	1-124-907-11	ELECT 10uF 20% 50V	
C580	1-124-907-11	ELECT 10uF 20% 50V	(EXCEPT B)
C581	1-124-907-11	ELECT 10uF 20% 50V	
C582	1-124-907-11	ELECT 10uF 20% 50V	(EXCEPT B)
C701	1-124-126-00	ELECT 47uF 20% 10V	(B/NP/VC)
C702	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(B/NP/VC)
C703	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(B/NP/VC)
C704	1-163-031-11	CERAMIC CHIP 0.01uF 50V	(B/NP/VC)
C706	1-124-907-11	ELECT 10uF 20% 50V	(B/NP/VC)
C707	1-124-907-11	ELECT 10uF 20% 50V	(B/NP/VC)
C708	1-124-907-11	ELECT 10uF 20% 50V	(B/NP/VC)

< CONNECTOR >

Ref. No.	Part No.	Description	Remarks
CN501	1-691-276-11	CONNECTOR, BOARD TO BOARD 13P	
* CN502	1-568-788-21	PIN, CONNECTOR 11P	(EXCEPT B)
* CN502	1-568-789-11	PIN, CONNECTOR 12P	(B)
* CN503	1-573-129-31	PIN, CONNECTOR 6P	
* CN504	1-568-788-21	PIN, CONNECTOR 11P	
CN505	1-563-590-11	CONNECTOR, FLEXIBLE 13P	(B/NP/VC)
* CN506	1-573-131-11	PIN, CONNECTOR 8P	
CN507	1-506-468-11	PIN, CONNECTOR 3P	

< DIODE >

Ref. No.	Part No.	Description	Remarks
D501	8-719-911-19	DIODE 1SS119	(EXCEPT B)
D502	8-719-911-19	DIODE 1SS119	
D503	8-719-911-19	DIODE 1SS119	(B)
D504	8-719-911-19	DIODE 1SS119	(B)
D505	8-719-911-19	DIODE 1SS119	(B)

< IC >

Ref. No.	Part No.	Description	Remarks
IC501	8-759-503-52	IC MM1053XS	
IC502	8-759-048-09	IC MM1148XFF	
IC503	8-759-501-21	IC MM1149XF	
IC504	8-759-504-44	IC MM1031XMR	
IC551	8-759-501-21	IC MM1149XF	
IC552	8-759-420-62	IC AN3916	(EXCEPT B)
IC552	8-759-504-44	IC MM1031XMR	(B)
IC553	8-759-048-09	IC MM1148XFF	
IC554	8-759-048-09	IC MM1148XFF	
IC555	8-759-048-09	IC MM1148XFF	(B/NP/VC)
IC556	8-759-048-09	IC MM1148XFF	(EXCEPT B)
IC701	8-759-056-91	IC BA7611AN	(B/NP/VC)

< JUMPER RESISTOR >

Ref. No.	Part No.	Description	Remarks
JR502	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT B)
JR503	1-216-295-00	METAL CHIP 0 5% 1/10W	(EXCEPT B)
JR552	1-216-295-00	METAL CHIP 0 5% 1/10W	(AEP/UB/NC)
JR901	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR902	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR903	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR904	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR905	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR906	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR907	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR908	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR909	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR910	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR911	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR912	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR913	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR914	1-216-295-00	METAL CHIP 0 5% 1/10W	

< COIL >

Ref. No.	Part No.	Description	Remarks
L501	1-410-521-11	INDUCTOR 100uH	
L502	1-410-521-11	INDUCTOR 100uH	
L701	1-410-521-11	INDUCTOR 100uH	(B/NP/VC)

< TRANSISTOR >

Ref. No.	Part No.	Description	Remarks
Q501	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q502	8-729-216-22	TRANSISTOR 2SA1162	
Q503	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q504	8-729-900-53	TRANSISTOR DTC114EK	(EXCEPT B)
Q506	8-729-901-06	TRANSISTOR DTA144EK	(B)
Q507	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q508	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q552	8-729-216-22	TRANSISTOR 2SA1162	(EXCEPT B)
Q701	8-729-216-22	TRANSISTOR 2SA1162	(B/NP/VC)
Q702	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(B/NP/VC)
Q703	8-729-216-22	TRANSISTOR 2SA1162	(B/NP/VC)
Q704	8-729-901-01	TRANSISTOR DTC144EK	(B/NP/VC)
Q705	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q706	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q707	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q708	8-729-901-01	TRANSISTOR DTC144EK	(B)

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R501	1-216-025-00	METAL CHIP 100 5% 1/10W	
R502	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT B)
R502	1-216-097-00	METAL CHIP 100K 5% 1/10W	(B)
R503	1-216-025-00	METAL CHIP 100 5% 1/10W	
R504	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R505	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R506	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R507	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R508	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R509	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R510	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R511	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R512	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT B)
R513	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(B)
R514	1-216-073-00	METAL CHIP 10K 5% 1/10W	(B)
R515	1-216-037-00	METAL CHIP 330 5% 1/10W	(B)
R516	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R551	1-216-025-00	METAL CHIP 100 5% 1/10W	
R552	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT B)
R553	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT B)
R556	1-216-025-00	METAL CHIP 100 5% 1/10W	(EXCEPT B)
R557	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT B)
R560	1-216-025-00	METAL CHIP 100 5% 1/10W	
R561	1-216-025-00	METAL CHIP 100 5% 1/10W	
R562	1-216-025-00	METAL CHIP 100 5% 1/10W	(B/NP/VC)

Ref. No.	Part No.	Description	Remarks
R580	1-216-049-00	METAL CHIP 1K 5%	1/10W (EXCEPT B)
R581	1-216-049-00	METAL CHIP 1K 5%	1/10W
R582	1-216-047-00	METAL CHIP 820 5%	1/10W (B)
R598	1-249-407-11	CARBON 150	1/4W (EXCEPT B)
R701	1-216-025-00	METAL CHIP 100 5%	1/10W (NP/VC)
R702	1-216-063-00	METAL CHIP 3.9K 5%	1/10W (NP/VC)
R703	1-216-049-00	METAL CHIP 1K 5%	1/10W (B/NP/VC)
R704	1-216-021-00	METAL CHIP 68 5%	1/10W (B/NP/VC)
R705	1-216-069-00	METAL CHIP 6.8K 5%	1/10W (B/NP/VC)
R706	1-216-065-00	METAL CHIP 4.7K 5%	1/10W (B/NP/VC)
R707	1-216-073-00	METAL CHIP 10K 5%	1/10W (NP/VC)
R708	1-216-049-00	METAL CHIP 1K 5%	1/10W (NP/VC)
R709	1-216-065-00	METAL CHIP 4.7K 5%	1/10W (B)
R710	1-216-065-00	METAL CHIP 4.7K 5%	1/10W (B)
R711	1-216-065-00	METAL CHIP 4.7K 5%	1/10W (B)

< VARIABLE RESISTOR >

RV551	1-241-083-11	RES, ADJ, CARBON 47K	(AEP/UB/NC)
RV551	1-241-632-11	RES, ADJ, CARBON 47K	(NP/VC)

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* A-6755-563-A VP-33 BOARD, COMPLETE (VC)

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* A-6755-799-A VP-33 BOARD, COMPLETE (B)

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(Ref. No. 9000 Series)

< CAPACITOR >

C651	1-163-121-00	CERAMIC CHIP 150PF 5%	50V (VC)
C652	1-163-989-11	CERAMIC CHIP 0.033uF 10%	25V (VC)
C653	1-163-035-00	CERAMIC CHIP 0.047uF	50V (VC)
C654	1-163-038-00	CERAMIC CHIP 0.1uF	25V (VC)
C655	1-163-035-00	CERAMIC CHIP 0.047uF	50V (VC)
C658	1-126-157-11	ELECT 10uF 20%	16V (VC)

< CONNECTOR >

CN650	1-573-824-11	CONNECTOR, BOARD TO BOARD 10P	(VC)

< DIODE >

D651	8-719-104-34	DIODE 1S2835	(VC)

< IC >

IC651	8-759-030-60	IC SDA5642	(VC)
IC652	8-759-147-30	IC uPD75004GB-VSX182	(VC)

< COIL >

L651	1-410-509-11	INDUCTOR 10uH	(VC)

Ref. No.	Part No.	Description	Remarks

< TRANSISTOR >

Q651	8-729-421-19	TRANSISTOR UN2213	(VC)

< RESISTOR >

R651	1-216-057-00	METAL CHIP 2.2K 5%	1/10W (VC)
R652	1-216-121-00	METAL CHIP 1M 5%	1/10W (VC)
R653	1-249-429-11	CARBON 10K 5%	1/4W (VC)
R654	1-216-097-00	METAL CHIP 100K 5%	1/10W (VC)
R655	1-216-119-00	METAL CHIP 820K 5%	1/10W (VC)
R656	1-216-025-00	METAL CHIP 100 5%	1/10W (VC)
R657	1-216-119-00	METAL CHIP 820K 5%	1/10W (VC)
R658	1-249-426-11	CARBON 5.6K 5%	1/4W (VC)
R659	1-216-073-00	METAL CHIP 10K 5%	1/10W (VC)
R660	1-216-073-00	METAL CHIP 10K 5%	1/10W (VC)
R661	1-216-073-00	METAL CHIP 10K 5%	1/10W (VC)
R662	1-216-073-00	METAL CHIP 10K 5%	1/10W (VC)
R663	1-216-101-00	METAL CHIP 150K 5%	1/10W (VC)

< VIBRATOR >

X651	1-577-291-11	OSCILLATOR, CERAMIC(WITH C) 4.19MHz	(VC)

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* A-6727-418-A YC-124 BOARD, COMPLETE (AEP/NC/NP)

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* A-6727-456-A YC-124 BOARD, COMPLETE (UB)

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* A-6727-442-A YC-124 BOARD, COMPLETE (VC)

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* A-6727-465-A YC-124 BOARD, COMPLETE (B)

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(Ref. No. 2000 Series)

* 3-948-127-01 HOLDER, HF

< CAPACITOR >

C101	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C102	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C103	1-124-927-11	ELECT 4.7uF 20%	100V
C104	1-126-233-11	ELECT 22uF 20%	50V
C105	1-163-038-00	CERAMIC CHIP 0.1uF	25V
C106	1-124-927-11	ELECT 4.7uF 20%	100V
C107	1-124-927-11	ELECT 4.7uF 20%	100V
C108	1-163-093-00	CERAMIC CHIP 10PF 5%	50V
C109	1-124-584-00	ELECT 100uF 20%	10V
C110	1-163-035-00	CERAMIC CHIP 0.047uF	50V
C111	1-163-129-00	CERAMIC CHIP 330PF 5%	50V
C112	1-163-131-00	CERAMIC CHIP 390PF 5%	50V
C113	1-163-139-00	CERAMIC CHIP 820PF 5%	50V
C114	1-163-031-11	CERAMIC CHIP 0.01uF	50V
C115	1-163-031-11	CERAMIC CHIP 0.01uF	50V

Ref. No.	Part No.	Description				Remarks
C116	1-216-295-00	METAL CHIP	0	5%	1/10W	
C117	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C118	1-124-927-11	ELECT	4.7uF	20%	100V	
C119	1-163-088-00	CERAMIC CHIP	5PF		50V	
C120	1-216-295-00	METAL CHIP	0	5%	1/10W	
C121	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	(B)
C122	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C123	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C124	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C125	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C126	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C127	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C128	1-163-107-00	CERAMIC CHIP	39PF	5%	50V	
C130	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C131	1-124-584-00	ELECT	100uF	20%	10V	
C132	1-163-115-00	CERAMIC CHIP	82PF	5%	50V	
C133	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C134	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C135	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C136	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C137	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C138	1-124-925-11	ELECT	2.2uF	20%	100V	
C139	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C141	1-124-126-00	ELECT	47uF	20%	10V	
C143	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C144	1-124-126-00	ELECT	47uF	20%	10V	
C146	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C147	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C149	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C150	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C151	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C153	1-124-126-00	ELECT	47uF	20%	10V	
C154	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C155	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C156	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C160	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C163	1-124-927-11	ELECT	4.7uF	20%	100V	
C170	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C172	1-163-033-00	CERAMIC CHIP	0.022uF		50V	(B)
C180	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C181	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	(B)
C182	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C183	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	
C185	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C190	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C300	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C301	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C302	1-124-442-00	ELECT	330uF	20%	6.3V	
C303	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C304	1-163-038-00	CERAMIC CHIP	0.1uF		25V	(EXCEPT B)
C305	1-163-033-00	CERAMIC CHIP	0.022uF		50V	
C306	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C307	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C308	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C309	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C310	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C311	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C312	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C313	1-124-584-00	ELECT	100uF	20%	10V	
C314	1-124-584-00	ELECT	100uF	20%	10V	
C315	1-164-330-21	CERAMIC CHIP	0.22uF	10%	16V	
C316	1-126-163-11	ELECT	4.7uF	20%	50V	
C317	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C318	1-163-036-00	CERAMIC CHIP	0.068uF		50V	
C319	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C320	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C321	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C323	1-124-927-11	ELECT	4.7uF	20%	100V	
C325	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C326	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C327	1-164-336-11	CERAMIC CHIP	0.33uF		25V	
C328	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C329	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C330	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C331	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C332	1-124-903-11	ELECT	1uF	20%	50V	(EXCEPT B)
C332	1-124-902-00	ELECT	0.47uF	20%	50V	(B)
C333	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C334	1-124-902-00	ELECT	0.47uF	20%	50V	
C335	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C336	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C337	1-163-099-00	CERAMIC CHIP	18PF	5%	50V	
C338	1-124-126-00	ELECT	47uF	20%	10V	
C339	1-124-589-11	ELECT	47uF	20%	16V	
C340	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C341	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B/YC)
C342	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C343	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B/YC)
C345	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C346	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C348	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C350	1-163-129-00	CERAMIC CHIP	330PF	5%	50V	
C358	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C360	1-124-126-00	ELECT	47uF	20%	10V	
C361	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C362	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C363	1-124-903-11	ELECT	1uF	20%	50V	
C364	1-124-126-00	ELECT	47uF	20%	10V	
C365	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C366	1-124-903-11	ELECT	1uF	20%	50V	

YC-124

Ref. No.	Part No.	Description				Remarks
C367	1-124-907-11	ELECT	10uF	20%	50V	
C368	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C369	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C370	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	
C371	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	
C372	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C373	1-163-101-00	CERAMIC CHIP	22PF	5%	50V	
C374	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C375	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C376	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V	
C377	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C378	1-163-213-00	CERAMIC CHIP	0.0022uF	5%	50V	
C379	1-163-035-00	CERAMIC CHIP	0.047uF		50V	
C380	1-124-903-11	ELECT	1uF	20%	50V	
C381	1-124-907-11	ELECT	10uF	20%	50V	
C382	1-123-382-00	ELECT	3.3uF	20%	100V	
C383	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C384	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C385	1-124-907-11	ELECT	10uF	20%	50V	
C386	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C387	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C388	1-124-907-11	ELECT	10uF	20%	50V	
C389	1-163-109-00	CERAMIC CHIP	47PF	5%	50V	
C390	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C391	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C392	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	
C393	1-124-034-51	ELECT	33uF	20%	16V	
C394	1-126-160-11	ELECT	1uF	20%	50V	
C395	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C396	1-124-903-11	ELECT	1uF	20%	50V	
C398	1-124-907-11	ELECT	10uF	20%	50V	
C399	1-124-126-00	ELECT	47uF	20%	10V	(B/VC)
C401	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C402	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	(B)
C403	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C404	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C405	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C406	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C408	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C409	1-124-126-00	ELECT	47uF	20%	10V	(B)
C410	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C411	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C412	1-124-126-00	ELECT	47uF	20%	10V	(B)
C413	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	(B)
C414	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C415	1-163-038-00	CERAMIC CHIP	0.1uF		25V	(B)
C416	1-163-205-00	CERAMIC CHIP	0.001uF	5%	50V	(B)
C417	1-163-243-11	CERAMIC CHIP	47PF	5%	50V	(B)
C418	1-163-033-00	CERAMIC CHIP	0.022uF		50V	(B)
C419	1-163-035-00	CERAMIC CHIP	0.047uF		50V	(B)
C420	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C421	1-163-038-00	CERAMIC CHIP	0.1uF		25V	(B)
C422	1-124-126-00	ELECT	47uF	20%	10V	(B)
C426	1-163-113-00	CERAMIC CHIP	68PF	5%	50V	(B)
C427	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	(B)
C428	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B)
C429	1-163-241-11	CERAMIC CHIP	39PF	5%	50V	(B)
C450	1-163-145-00	CERAMIC CHIP	0.0015uF	5%	50V	(B/VC)
C451	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B/VC)
C452	1-163-038-00	CERAMIC CHIP	0.1uF		25V	(B/VC)
C454	1-124-927-11	ELECT	4.7uF	20%	100V	(B/VC)
C455	1-124-126-00	ELECT	47uF	20%	10V	(B/VC)
C457	1-163-031-11	CERAMIC CHIP	0.01uF		50V	(B/VC)
C460	1-163-035-00	CERAMIC CHIP	0.047uF		50V	(B/VC)
C461	1-163-035-00	CERAMIC CHIP	0.047uF		50V	(B)
C462	1-163-035-00	CERAMIC CHIP	0.047uF		50V	(B)
C463	1-124-907-11	ELECT	10uF	20%	50V	(B)
C464	1-124-126-00	ELECT	47uF	20%	10V	(B)
C465	1-124-907-11	ELECT	10uF	20%	50V	
C501	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C502	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C511	1-163-111-00	CERAMIC CHIP	56PF	5%	50V	
C512	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C513	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C514	1-216-295-00	METAL CHIP	0	5%	1/10W	
C515	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C516	1-124-927-11	ELECT	4.7uF	20%	100V	
C517	1-124-126-00	ELECT	47uF	20%	10V	
C518	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C519	1-163-031-11	CERAMIC CHIP	0.01		50V	
		< CONNECTOR >				
CN300	1-506-473-11	PIN, CONNECTOR	8P			
CN301	1-506-473-11	PIN, CONNECTOR	8P			
CN304	1-506-468-11	PIN, CONNECTOR	3P			(B)
* CN305	1-573-134-41	PIN, CONNECTOR	11P			
		< DIODE >				
D101	8-719-400-18	DIODE	MA152WK			
D105	8-719-400-18	DIODE	MA152WK			
D301	8-719-400-18	DIODE	MA152WK			
D302	8-719-400-18	DIODE	MA152WK			
D401	8-719-400-18	DIODE	MA152WK			(B)
		< DELAY LINE >				
DL301	1-415-602-11	DELAY LINE, GLASS				
DL501	1-415-856-11	DELAY LINE, ULTRASONIC GLASS				

< FILTER >

Ref. No.	Part No.	Description	Remarks
FL101	1-236-312-11	FILTER, BAND PASS	
FL301	1-239-915-11	FILTER, BAND PASS	
FL302	1-236-311-11	FILTER, BAND PASS 5.06MHz	
FL303	1-527-849-00	FILTER, CERAMIC13.3MHz	
FL401	1-236-584-11	BPF (B)	
FL402	1-236-582-11	BPF 4.3MHz (B)	
FL403	1-236-920-11	FILTER, LOW PASS 1.1MHz (B)	
FL404	1-236-920-11	FILTER, LOW PASS 1.1MHz (B)	
FL405	1-236-585-11	BPF 4.3MHz (B)	
FL406	1-236-585-11	BPF 4.3MHz (B)	
FL450	1-527-943-00	FILTER, CERAMIC (B/VC)	

< IC >

Ref. No.	Part No.	Description	Remarks
IC101	8-759-420-07	IC AN3231K	
IC102	8-752-321-89	IC CXL5003P	
IC301	8-759-320-78	IC HA118016NT	
IC302	8-759-822-05	IC LA7213	
IC360	8-759-420-53	IC AN3592K	
IC361	8-759-991-54	IC MSM6989RS	
IC362	8-759-927-56	IC BA7021	
IC363	8-759-822-05	IC LA7213 (EXCEPT B)	
IC401	8-759-991-55	IC BA7107 (B)	
IC450	8-759-904-95	IC BA7007 (B/VC)	
IC460	8-759-927-46	IC SN74HC00ANS (B)	
IC461	8-759-987-16	IC LM393P (B)	
IC501	8-759-925-90	IC SN74HC74ANS	
IC502	8-759-300-71	IC TC4053BF	

< JUMPER CHIP >

Ref. No.	Part No.	Description	Remarks
JR001	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR002	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR003	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR004	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR005	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR006	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR007	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR008	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR009	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR010	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR011	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR012	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR013	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR014	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR017	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR018	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR019	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR020	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR036	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR038	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR039	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR040	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR041	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR042	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR043	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR044	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR045	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR046	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR047	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR048	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR049	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR050	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR051	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR052	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR053	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR054	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR055	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR056	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR057	1-216-295-00	METAL CHIP 0 5% 1/10W	(VC)
JR058	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR064	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR065	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR066	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR068	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR500	1-216-295-00	METAL CHIP 0 5% 1/10W	

< COIL >

Ref. No.	Part No.	Description	Remarks
L101	1-408-421-00	INDUCTOR 100uH	
L102	1-408-417-00	INDUCTOR 47uH (B)	
L103	1-408-419-00	INDUCTOR 68uH (B)	
L104	1-408-420-00	INDUCTOR 82uH	
L105	1-408-422-00	INDUCTOR 120uH	
L105	1-408-424-00	INDUCTOR 180uH (EXCEPT B)	
L106	1-408-421-00	INDUCTOR 100uH	
L107	1-408-421-00	INDUCTOR 100uH	
L108	1-408-421-00	INDUCTOR 100uH	
L109	1-408-421-00	INDUCTOR 100uH	
L112	1-408-410-00	INDUCTOR 12uH	
L113	1-408-413-00	INDUCTOR 22uH	
L119	1-408-417-00	INDUCTOR 47uH	
L126	1-408-424-00	INDUCTOR 180uH	
L301	1-408-421-00	INDUCTOR 100uH	
L302	1-408-427-00	INDUCTOR 330uH	
L303	1-408-429-00	INDUCTOR 470uH	
L305	1-408-409-00	INDUCTOR 10uH	
L306	1-408-408-00	INDUCTOR 8.2uH	
L307	1-408-408-00	INDUCTOR 8.2uH	

Ref. No.	Part No.	Description	Remarks
L309	1-407-499-00	INDUCTOR 3.9mH	
L331	1-408-509-11	INDUCTOR 10uH	
L360	1-408-409-00	INDUCTOR 10uH	
L361	1-408-415-00	INDUCTOR 33uH	
L362	1-408-409-00	INDUCTOR 10uH	
L380	1-408-421-00	INDUCTOR 100uH	
L381	1-408-421-00	INDUCTOR 100uH	
L382	1-408-411-00	INDUCTOR 15uH	
L383	1-408-414-00	INDUCTOR 27uH	
L401	1-408-425-00	INDUCTOR 220uH	(B)
L410	1-408-414-00	INDUCTOR 27uH	(B)
L414	1-408-416-00	INDUCTOR 39uH	(B)
L415	1-408-416-00	INDUCTOR 39uH	(B)
L450	1-410-068-11	INDUCTOR 5.6mH	(B/VC)
L451	1-408-409-00	INDUCTOR 10uH	(B)
L490	1-410-509-11	INDUCTOR 10uH	(B)
L491	1-410-509-11	INDUCTOR 10uH	(B)
L501	1-408-406-00	INDUCTOR 5.6uH	
L502	1-410-521-11	INDUCTOR 100uH	(B)

< TRANSISTOR >

Ref. No.	Part No.	Description	Remarks
Q102	8-729-216-22	TRANSISTOR 2SA1162	
Q104	8-729-901-01	TRANSISTOR DTC144EK	
Q105	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q106	8-729-216-22	TRANSISTOR 2SA1162	
Q111	8-729-216-22	TRANSISTOR 2SA1162	
Q114	8-729-901-01	TRANSISTOR DTC144EK	(EXCEPT B)
Q121	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q122	8-729-901-01	TRANSISTOR DTC144EK	
Q123	8-729-901-01	TRANSISTOR DTC144EK	
Q124	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q125	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q301	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q302	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q303	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q304	8-729-900-53	TRANSISTOR DTC114EK	
Q305	8-729-216-22	TRANSISTOR 2SA1162	
Q306	8-729-901-01	TRANSISTOR DTC144EK	
Q307	8-729-920-74	TRANSISTOR 2SC2412K-QR	(B/VC)
Q308	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q309	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q310	8-729-901-04	TRANSISTOR DTA114EK	
Q352	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q360	8-729-809-77	TRANSISTOR 2SC3142-J4	
Q362	8-729-901-01	TRANSISTOR DTC144EK	
Q380	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q381	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q382	8-729-216-22	TRANSISTOR 2SA1162	
Q390	8-729-901-01	TRANSISTOR DTC144EK	
Q399	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q401	8-729-920-74	TRANSISTOR 2SC2412K-QR	(B)
Q402	8-729-920-74	TRANSISTOR 2SC2412K-QR	(B)
Q403	8-729-901-47	TRANSISTOR DTA143EK	
Q405	8-729-920-74	TRANSISTOR 2SC2412K-QR	(B)
Q406	8-729-901-47	TRANSISTOR DTA143EK	(B)
Q407	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q408	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q450	8-729-920-74	TRANSISTOR 2SC2412K-QR	(B/VC)
Q451	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q452	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q453	8-729-901-01	TRANSISTOR DTC144EK	
Q460	8-729-901-01	TRANSISTOR DTC144EK	(B)
Q501	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q502	8-729-901-01	TRANSISTOR DTC144EK	
Q511	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q512	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q513	8-729-920-74	TRANSISTOR 2SC2412K-QR	(B)
Q514	8-729-901-01	TRANSISTOR DTC144EK	
Q515	8-729-901-01	TRANSISTOR DTC144EK	
Q516	8-729-901-04	TRANSISTOR DTA114EK	
Q517	8-729-901-47	TRANSISTOR DTA143EK	
Q518	8-729-901-01	TRANSISTOR DTC144EK	
Q599	8-729-900-65	TRANSISTOR DTA144EK	

< RESISTOR >

Ref. No.	Part No.	Description	Remarks
R101	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R102	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R103	1-216-071-00	METAL CHIP 8.2K 5% 1/10W	
R104	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R105	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R106	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R107	1-216-052-00	METAL CHIP 1.3K 5% 1/10W	
R108	1-216-036-00	METAL CHIP 300 5% 1/10W	
R109	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R110	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R112	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R113	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R114	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R116	1-216-041-00	METAL CHIP 470 5% 1/10W	
R117	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R118	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R119	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R120	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R122	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R123	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R124	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R125	1-216-039-00	METAL CHIP 390 5% 1/10W	
R126	1-216-047-00	METAL CHIP 820 5% 1/10W	
R127	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R128	1-216-115-00	METAL CHIP 560K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R129	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R130	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R131	1-216-041-00	METAL CHIP 470 5% 1/10W	
R134	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R135	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R136	1-216-041-00	METAL CHIP 470 5% 1/10W	
R137	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT B/UB)
R138	1-216-033-00	METAL CHIP 220 5% 1/10W	
R141	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R144	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R154	1-216-039-00	METAL CHIP 390 5% 1/10W	
R155	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R161	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R163	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R174	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R175	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R176	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R177	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R178	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R179	1-216-041-00	METAL CHIP 470 5% 1/10W	
R180	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R181	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R301	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R302	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R303	1-216-041-00	METAL CHIP 470 5% 1/10W	
R305	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R306	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R307	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R308	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R309	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R310	1-216-045-00	METAL CHIP 680 5% 1/10W	
R311	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R312	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R313	1-216-041-00	METAL CHIP 470 5% 1/10W	
R314	1-216-045-00	METAL CHIP 680 5% 1/10W	
R315	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R316	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R317	1-216-025-00	METAL CHIP 100 5% 1/10W	
R318	1-216-039-00	METAL CHIP 390 5% 1/10W	
R319	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R320	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R322	1-216-055-00	METAL CHIP 1.8K 5% 1/10W	
R323	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R324	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R325	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	(B/VC)
R326	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	(B/VC)
R327	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	(B/VC)
R328	1-216-035-00	METAL CHIP 270 5% 1/10W	
R332	1-216-033-00	METAL CHIP 220 5% 1/10W	
R333	1-216-037-00	METAL CHIP 330 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R334	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R335	1-216-037-00	METAL CHIP 330 5% 1/10W	
R336	1-216-037-00	METAL CHIP 330 5% 1/10W	
R337	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R338	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R339	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R355	1-216-037-00	METAL CHIP 330 5% 1/10W	
R356	1-216-105-00	METAL CHIP 220K 5% 1/10W	
R357	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R358	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R360	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R362	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R363	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R364	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R365	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R367	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R368	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R369	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R370	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R372	1-216-033-00	METAL CHIP 220 5% 1/10W	
R373	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R374	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R375	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R380	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R381	1-216-037-00	METAL CHIP 330 5% 1/10W	
R382	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R383	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R384	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R385	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R386	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R387	1-216-041-00	METAL CHIP 470 5% 1/10W	
R388	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R390	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R394	1-216-025-00	METAL CHIP 100 5% 1/10W	
R395	1-216-041-00	METAL CHIP 470 5% 1/10W	
R399	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R401	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R402	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R403	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R404	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R405	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R407	1-216-085-00	METAL CHIP 33K 5% 1/10W	(B)
R408	1-216-081-00	METAL CHIP 22K 5% 1/10W	(B)
R409	1-216-037-00	METAL CHIP 330 5% 1/10W	(B)
R410	1-216-017-00	METAL CHIP 47 5% 1/10W	(B)
R411	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	(B)
R412	1-216-041-00	METAL CHIP 470 5% 1/10W	(B)
R413	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R414	1-216-075-00	METAL CHIP 12K 5% 1/10W	(B)
R415	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	(B)

Ref. No.	Part No.	Description	Remarks
R416	1-216-047-00	METAL CHIP 820 5% 1/10W	(B)
R417	1-216-093-00	METAL CHIP 68K 5% 1/10W	(B)
R418	1-216-097-00	METAL CHIP 100K 5% 1/10W	(B)
R419	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R420	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R421	1-216-047-00	METAL CHIP 820 5% 1/10W	(B)
R422	1-216-075-00	METAL CHIP 12K 5% 1/10W	(B)
R423	1-216-041-00	METAL CHIP 470 5% 1/10W	(B)
R425	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	(B)
R428	1-216-081-00	METAL CHIP 22K 5% 1/10W	(B)
R429	1-216-079-00	METAL CHIP 18K 5% 1/10W	(B)
R430	1-216-113-00	METAL CHIP 470K 5% 1/10W	(B)
R431	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R446	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(B/VC)
R447	1-216-073-00	METAL CHIP 10K 5% 1/10W	(B/VC)
R448	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	(B)
R449	1-216-081-00	METAL CHIP 22K 5% 1/10W	(B/VC)
R450	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(B/VC)
R451	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(B)
R452	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(B)
R454	1-216-109-00	METAL CHIP 330K 5% 1/10W	(B/VC)
R460	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B/VC)
R461	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	(B/VC)
R462	1-216-089-00	METAL CHIP 47K 5% 1/10W	(B)
R463	1-216-089-00	METAL CHIP 47K 5% 1/10W	(B)
R464	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R465	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R466	1-216-089-00	METAL CHIP 47K 5% 1/10W	(B)
R467	1-216-089-00	METAL CHIP 47K 5% 1/10W	(B)
R468	1-216-083-00	METAL CHIP 27K 5% 1/10W	(B)
R469	1-216-089-00	METAL CHIP 47K 5% 1/10W	(B)
R470	1-216-073-00	METAL CHIP 10K 5% 1/10W	(B)
R471	1-216-049-00	METAL CHIP 1K 5% 1/10W	(B)
R478	1-216-073-00	METAL CHIP 10K 5% 1/10W	(B)
R501	1-216-035-00	METAL CHIP 270 5% 1/10W	
R502	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R503	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R504	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R505	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R511	1-216-045-00	METAL CHIP 680 5% 1/10W	
R512	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R513	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R514	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	(B)
R515	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(B)
R518	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R519	1-216-222-00	METAL GLAZE 10K 5% 1/8W	
R520	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R521	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R522	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R523	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R524	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R527	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R528	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R529	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R530	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R531	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R599	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remarks
RV101	1-241-079-11	RES, ADJ, CARBON 4.7K	
RV102	1-241-079-11	RES, ADJ, CARBON 4.7K	
RV103	1-241-080-11	RES, ADJ, CARBON 10K	(EXCEPT VC)
RV103	1-241-079-11	RES, ADJ, CARBON 4.7K	(VC)
RV104	1-241-081-11	RES, ADJ, CARBON 22K	
RV105	1-241-081-11	RES, ADJ, CARBON 22K	
RV107	1-241-076-11	RES, ADJ, CARBON 1K	
RV108	1-241-080-11	RES, ADJ, CARBON 10K	
RV110	1-241-076-11	RES, ADJ, CARBON 1K	
RV301	1-241-076-11	RES, ADJ, CARBON 1K	
RV360	1-237-521-21	RES, ADJ, CARBON 100K	
RV361	1-241-076-11	RES, ADJ, CARBON 1K	
RV401	1-241-079-11	RES, ADJ, CARBON 4.7K	(B)
RV402	1-237-521-21	RES, ADJ, CARBON 100K	(B)
RV450	1-241-075-11	RES, ADJ, CARBON 470	(B/VC)

< TRANSFORMER >

Ref. No.	Part No.	Description	Remarks
T302	1-409-467-11	COIL (TRAP 7.8K)	
T450	1-409-467-11	COIL (TRAP 7.8K)	(B/VC)

< VIBRATOR >

Ref. No.	Part No.	Description	Remarks
X301	1-577-651-11	VIBRATOR, CRYSTAL 4.43MHz	

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* A-6721-515-A TC-27 BOARD, COMPLETE (B MODEL)

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(Ref.No. 18000 Series)

< CAPACITOR >

Ref. No.	Part No.	Description	Remarks
C102	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C103	1-126-301-11	ELECT 1uF 20% 50V	
C104	1-126-301-11	ELECT 1uF 20% 50V	
C105	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C106	1-163-133-00	CERAMIC CHIP 470PF 5% 50V	
C107	1-124-638-11	ELECT 22uF 20% 10V	
C108	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C109	1-163-031-11	CERAMIC CHIP 0.01uF 50V	
C110	1-126-177-11	ELECT 100uF 20% 10V	
C111	1-163-031-11	CERAMIC CHIP 0.01uF 50V	

Ref. No.	Part No.	Description				Remarks
C112	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C113	1-163-118-00	CERAMIC CHIP	110PF	5%	50V	
C114	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	
C115	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C117	1-126-301-11	ELECT	1uF	20%	50V	
C118	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C119	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C120	1-126-163-11	ELECT	4.7uF	20%	50V	
C122	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C123	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C125	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C126	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C129	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C130	1-126-157-11	ELECT	10uF	20%	16V	
C131	1-126-157-11	ELECT	10uF	20%	16V	
C132	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C133	1-163-118-00	CERAMIC CHIP	110PF	5%	50V	
C134	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	
C135	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C136	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C137	1-124-638-11	ELECT	22uF	20%	10V	
C138	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C139	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C140	1-126-177-11	ELECT	100uF	20%	10V	
C141	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C142	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C143	1-163-118-00	CERAMIC CHIP	110PF	5%	50V	
C144	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	
C145	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C147	1-126-301-11	ELECT	1uF	20%	50V	
C148	1-163-017-00	CERAMIC CHIP	0.0047uF	5%	50V	
C149	1-163-141-00	CERAMIC CHIP	0.001uF	5%	50V	
C150	1-126-163-11	ELECT	4.7uF	20%	50V	
C151	1-126-177-11	ELECT	100uF	20%	10V	
C152	1-124-638-11	ELECT	22uF	20%	10V	
C153	1-126-157-11	ELECT	10uF	20%	16V	
C154	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C155	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C156	1-126-301-11	ELECT	1uF	20%	50V	
C157	1-126-301-11	ELECT	1uF	20%	50V	
C159	1-126-301-11	ELECT	1uF	20%	50V	
C160	1-126-301-11	ELECT	1uF	20%	50V	
C163	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C164	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C165	1-126-177-11	ELECT	100uF	20%	10V	
C166	1-124-638-11	ELECT	22uF	20%	10V	
C167	1-126-157-11	ELECT	10uF	20%	16V	
C168	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C169	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C171	1-126-163-11	ELECT	4.7uF	20%	50V	
C172	1-126-157-11	ELECT	10uF	20%	16V	
C173	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C174	1-126-157-11	ELECT	10uF	20%	16V	
C175	1-126-157-11	ELECT	10uF	20%	16V	
C176	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C177	1-163-118-00	CERAMIC CHIP	110PF	5%	50V	
C178	1-163-103-00	CERAMIC CHIP	27PF	5%	50V	
C179	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C180	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C181	1-163-121-00	CERAMIC CHIP	150PF	5%	50V	
C183	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C184	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C186	1-163-105-00	CERAMIC CHIP	33PF	5%	50V	
C187	1-163-123-00	CERAMIC CHIP	180PF	5%	50V	
C191	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C192	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C193	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C194	1-163-125-00	CERAMIC CHIP	220PF	5%	50V	
C197	1-126-157-11	ELECT	10uF	20%	16V	
C198	1-126-157-11	ELECT	10uF	20%	16V	
C199	1-126-157-11	ELECT	10uF	20%	16V	
C200	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C201	1-124-229-00	ELECT	33uF	20%	10V	
C202	1-163-117-00	CERAMIC CHIP	100PF	5%	50V	
C204	1-126-157-11	ELECT	10uF	20%	16V	
C205	1-126-157-11	ELECT	10uF	20%	16V	
C206	1-163-127-00	CERAMIC CHIP	270PF	5%	50V	
C207	1-163-119-00	CERAMIC CHIP	120PF	5%	50V	
C208	1-126-157-11	ELECT	10uF	20%	16V	
C209	1-163-133-00	CERAMIC CHIP	470PF	5%	50V	
C210	1-126-157-11	ELECT	10uF	20%	16V	
C211	1-126-157-11	ELECT	10uF	20%	16V	
C214	1-163-257-11	CERAMIC CHIP	180PF	5%	50V	
C215	1-163-257-11	CERAMIC CHIP	180PF	5%	50V	
C216	1-126-157-11	ELECT	10uF	20%	16V	
C217	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C218	1-126-157-11	ELECT	10uF	20%	16V	
C219	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C220	1-126-157-11	ELECT	10uF	20%	16V	
C221	1-163-031-11	CERAMIC CHIP	0.01uF		50V	
C222	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C223	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C251	1-126-157-11	ELECT	10uF	20%	16V	
C252	1-126-157-11	ELECT	10uF	20%	16V	
C253	1-126-157-11	ELECT	10uF	20%	16V	

< CONNECTOR >

CN101	1-506-470-11	PIN, CONNECTOR	5P
CN102	1-506-473-11	PIN, CONNECTOR	8P
CN104	1-506-473-11	PIN, CONNECTOR	8P

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Ref. No.	Part No.	Description	Remarks
		< DIODE >	
D101	8-719-400-18	DIODE MA152WK	
		< DELAY LINE >	
DL101	1-415-313-00	DELAY LINE (1H)	
DL102	1-415-313-00	DELAY LINE (1H)	
		< FILTER >	
FL101	1-236-312-11	FILTER, BAND PASS	
		< IC >	
IC101	8-759-941-68	IC BA7131F	
IC102	8-752-035-00	IC CXA1227Q	
IC103	8-752-034-04	IC CXA1219M	
IC104	8-752-035-00	IC CXA1227Q	
IC105	8-752-034-04	IC CXA1219M	
IC106	8-759-710-29	IC NJM2235M	
IC107	8-759-008-67	IC MC14066BF	
		< JUMPER RESISTOR >	
JR001	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR002	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR003	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR004	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR005	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR006	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR007	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR008	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR009	1-216-295-00	METAL CHIP 0 5% 1/10W	
JR011	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR012	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR013	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR014	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR015	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR016	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR017	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR018	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR019	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR020	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR021	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR022	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR023	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR024	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR025	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR026	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR027	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR028	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR029	1-216-296-00	METAL CHIP 0 5% 1/8W	
JR030	1-216-296-00	METAL CHIP 0 5% 1/8W	

Ref. No.	Part No.	Description	Remarks
		< COIL >	
L102	1-408-421-00	INDUCTOR 100uH	
L103	1-408-408-00	INDUCTOR 8.2uH	
L104	1-408-408-00	INDUCTOR 8.2uH	
L105	1-408-410-00	INDUCTOR 12uH	
L106	1-408-409-00	INDUCTOR 10uH	
L107	1-408-409-00	INDUCTOR 10uH	
L108	1-408-410-00	INDUCTOR 12uH	
L109	1-408-408-00	INDUCTOR 8.2uH	
L110	1-408-408-00	INDUCTOR 8.2uH	
L111	1-408-410-00	INDUCTOR 12uH	
L112	1-408-409-00	INDUCTOR 10uH	
L113	1-408-409-00	INDUCTOR 10uH	
L114	1-408-410-00	INDUCTOR 12uH	
L115	1-408-421-00	INDUCTOR 100uH	
L116	1-408-421-00	INDUCTOR 100uH	
L117	1-408-421-00	INDUCTOR 100uH	
L119	1-410-509-11	INDUCTOR 10uH	
L120	1-410-509-11	INDUCTOR 10uH	
L121	1-408-422-00	INDUCTOR 120uH	
L122	1-408-426-00	INDUCTOR 270uH	
L123	1-410-520-11	INDUCTOR 82uH	
L124	1-410-507-11	INDUCTOR 6.8uH	
L125	1-410-520-11	INDUCTOR 82uH	
L126	1-410-507-11	INDUCTOR 6.8uH	
		< VARIABLE COIL >	
LV101	1-408-532-00	COIL, VARIABLE	
LV102	1-408-530-00	COIL, VARIABLE	
LV103	1-408-532-00	COIL, VARIABLE	
LV104	1-408-532-00	COIL, VARIABLE	
LV105	1-408-530-00	COIL, VARIABLE	
LV106	1-408-532-00	COIL, VARIABLE	
		< TRANSISTOR >	
Q101	8-729-216-22	TRANSISTOR 2SA1162	
Q102	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q103	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q104	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q105	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q107	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q109	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q110	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q111	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q112	8-729-920-74	TRANSISTOR 2SC2412K-QR	

Ref. No.	Part No.	Description	Remarks
Q113	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q114	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q115	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q116	8-729-216-22	TRANSISTOR 2SA1162	
Q117	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q118	8-729-216-22	TRANSISTOR 2SA1162	
Q119	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q120	8-729-216-22	TRANSISTOR 2SA1162	
Q121	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q122	8-729-901-01	TRANSISTOR DTC144EK	
Q123	8-729-920-74	TRANSISTOR 2SC2412K-QR	
Q124	8-729-216-22	TRANSISTOR 2SA1162	
Q125	8-729-901-01	TRANSISTOR DTC144EK	
		< RESISTOR >	
R101	1-216-043-00	METAL CHIP 560 5% 1/10W	
R102	1-216-041-00	METAL CHIP 470 5% 1/10W	
R103	1-216-041-00	METAL CHIP 470 5% 1/10W	
R104	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R105	1-216-039-00	METAL CHIP 390 5% 1/10W	
R106	1-216-039-00	METAL CHIP 390 5% 1/10W	
R107	1-216-039-00	METAL CHIP 390 5% 1/10W	
R108	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R109	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R110	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R111	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R112	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R113	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R114	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R115	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R116	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R121	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R122	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R123	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R124	1-216-039-00	METAL CHIP 390 5% 1/10W	
R125	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R126	1-216-039-00	METAL CHIP 390 5% 1/10W	
R127	1-216-039-00	METAL CHIP 390 5% 1/10W	
R128	1-216-039-00	METAL CHIP 390 5% 1/10W	
R129	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R130	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R131	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R132	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R134	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R135	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R136	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R137	1-216-060-00	METAL GLAZE 3K 5% 1/10W	
R138	1-216-067-00	METAL CHIP 5.6K 5% 1/10W	
R139	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R140	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R141	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R142	1-216-041-00	METAL CHIP 470 5% 1/10W	
R143	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	
R144	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R145	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R146	1-216-039-00	METAL CHIP 390 5% 1/10W	
R150	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R151	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R152	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R153	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R154	1-216-685-11	METAL CHIP 27K 0.5% 1/10W	
R155	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R156	1-216-043-00	METAL CHIP 560 5% 1/10W	
R162	1-216-685-11	METAL CHIP 27K 0.5% 1/10W	
R163	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R164	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R168	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R169	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R170	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R171	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R172	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R173	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R174	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R175	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R176	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R177	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R178	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R179	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R180	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R181	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R182	1-216-041-00	METAL CHIP 470 5% 1/10W	
R184	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R185	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R186	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R187	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R188	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R189	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R190	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R191	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R192	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R193	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R194	1-216-041-00	METAL CHIP 470 5% 1/10W	
R195	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R196	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R197	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R198	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R199	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R200	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R201	1-216-689-11	METAL CHIP 39K 0.5% 1/10W	
R202	1-216-073-00	METAL CHIP 10K 5% 1/10W	

Ref. No.	Part No.	Description	Remarks
R203	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R204	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R205	1-216-295-00	METAL CHIP 0 5% 1/10W	
R251	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R252	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV101	1-241-083-11	RES, ADJ, CARBON 47K	
RV102	1-241-080-11	RES, ADJ, CARBON 10K	
RV103	1-241-080-11	RES, ADJ, CARBON 10K	
RV104	1-241-083-11	RES, ADJ, CARBON 47K	
RV105	1-241-080-11	RES, ADJ, CARBON 10K	
RV106	1-241-080-11	RES, ADJ, CARBON 10K	
		< VIBRATOR >	
X101	1-577-117-21	OSCILLATOR, CRYSTAL 4.433619MHz	

* * *

MISCELLANEOUS

Ref. No.	Part No.	Description	Remarks
1	1-466-749-11	SWITCH BLOCK, CONTROL(AEP/B/E/NC/NP)	
1	1-466-749-21	SWITCH BLOCK, CONTROL(VC)	
1	1-466-749-51	SWITCH BLOCK, CONTROL(UB)	
⚠66	1-413-756-11	POWER BLOCK (SR-425)(AEP/B/E/NC/NP)	
⚠66	1-413-757-11	POWER BLOCK (SR-426)(UB)	
⚠66	1-413-758-11	POWER BLOCK (SR-427)(VC)	
70	1-696-439-11	WIRE, FLAT TYPE (10 CORE)	
71	1-696-440-11	WIRE, FLAT TYPE (16 CORE)	
124	1-696-438-11	WIRE, FLAT TYPE (13 CORE)(NP/VC)	
260	1-543-647-11	HEAD, FE	
264	1-550-785-11	DRUM ASSY (DZH-52AR)	
306	1-692-062-11	SWITCH, ROTARY	
336	8-835-489-01	MOTOR, DC U-26K	
* 343	1-633-460-11	PC BOAD, CA-41	

* * *

ACCESSORIES & PACKING MATERIALS

Ref. No.	Part No.	Description	Remarks
	1-693-178-11	REMOTE COMMANDER (RMT-V127)	
*	3-948-135-01	CUSHION (UPPER)	
*	3-948-136-01	CUSHION (LOWER)	
*	3-948-142-01	INDIVIDUAL CARTON (EXCEPT B)	
*	3-948-142-11	INDIVIDUAL CARTON (B)	
	1-551-513-00	CORD, CONNECTION (PAL)	
⚠	1-574-056-11	CORD, POWER (VC)	
⚠	1-575-131-11	CORD, POWER (AEP/B/E/NC/NP)	
	1-575-334-11	CORD, CONNECTION (A/V)	
⚠	1-590-866-21	CORD, POWER (UB)	
*	3-738-213-01	CASE, ACCESSORY	
	3-755-135-11	MANUAL, INSTRUCTION (ENGLISH)(UB/E)	
	3-755-135-41	MANUAL, INSTRUCTION (DUTCH, ITALIAN)(AEP)	
	3-755-135-51	MANUAL, INSTRUCTION (FRENCH, GERMANY, ITALIAN)(VC)	
	3-755-135-61	MANUAL, INSTRUCTION (SWEDISH, PORTUGUESE, DANISH) (NC)	
	3-755-135-71	MANUAL, INSTRUCTION (DUTCH, FRENCH, GERMAN) (NC)	
	3-755-135-81	MANUAL, INSTRUCTION (SPANISH)(NP)	
	3-755-135-91	MANUAL, INSTRUCTION (FRENCH)(B)	

* * *

HARDWARE LIST

Ref. No.	Part No.	Description	Remarks
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 IT-3	
#2	7-685-648-79	SCREW +BVTP 3X12 TYPE2 IT-3	
#3	7-682-547-04	SCREW +BVTT 3X6 (S)	
#4	7-621-255-25	SCREW +PTT 2X4 (S)	
#5	7-685-650-79	SCREW +BVTP 3X16 TYPE2 IT-3	
#6	7-621-732-08	SCREW	
#7	7-685-647-79	SCREW +BVTP 3X10 TYPE2 IT-3	
#8	7-682-548-04	SCREW +P 3X8	
#9	7-682-546-04	SCREW +P 3X5	
#10	7-628-254-00	SCREW +PS 2.6X5	
#11	7-624-102-04	STOP RING 1.5, TYPE-E	
#12	7-627-552-08	SCREW, PRECISION +P 1.7X2.5	

Note:	**Note:**
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.	Les composants identifiés par une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

MEMO

MEMO

SECTION 7
ELECTRICAL ADJUSTMENTS

During the adjustment, see the Parts Arrangement Diagram relevant to the adjustment on page 210.

7-1. PRE-ADJUSTMENT PREPARATIONS

Necessary items and indications for total adjustment of electric circuit of this machine will be described in this chapter.

7-1-1. Instruments to be Used

1) Color TV
2) Oscilloscope 1 or 2 phenomena, band more than 15 MHz, delay mode, as provided.
3) Frequency counter (min. 8 digits)
4) PAL pattern generator
5) SECAM pattern generator (SLV-815B only)
6) Digital voltmeter
7) Audio level meter
8) Audio generator
9) Attenuator
10) Distortion factor meter
11) Voice multiple signal generator
12) Alignment tape
    Part code: H7099052H (MH-2)
13) HiFi alignment tape

7-1-2. Connection

Unless otherwise specified, connect and adjust the measuring instruments as shown in the following diagram.

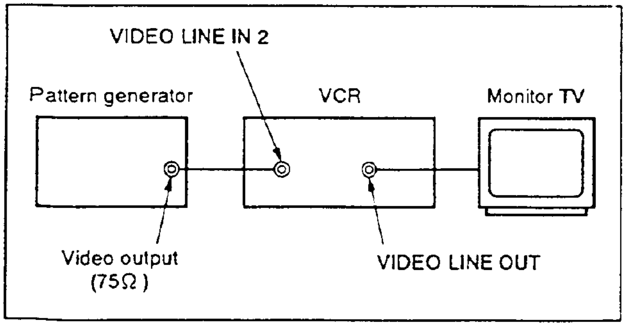

VIDEO LINE IN 2
Pattern generator
VCR
Monitor TV
Video output
(75Ω)
VIDEO LINE OUT

Fig. 7-1.

7-1-3. Setup for Adjustment

In this adjustment, PAL pattern generator is connected with LINE 2 input signal terminal.When check to tuner, connected AERIAL terminal. Check that the amplitudes of video signal SYNC signal, of picture portions, and of burst signals are flat at approximately 0.3, 0.7 and 0.3V, respectively, and that the level ratio of the burst signal and "red" signal are 0.30:0.66. Fig. 7-2. shows video signals (color bars) used in adjusting the video section.

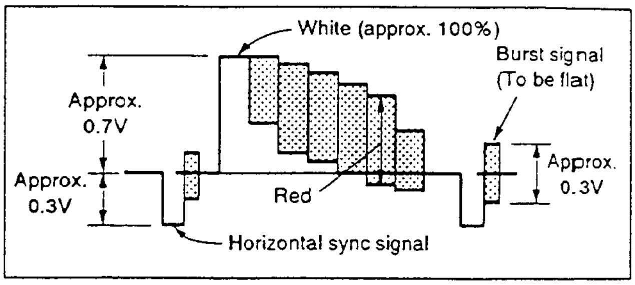

White (approx. 100%)
Burst signal
(To be flat)
Approx.
0.7V
Approx.
0.3V
Red
Approx.
0.3V
Horizontal sync signal

Fig. 7-2.

7-1-4. Alignment Tape (MH-2)

	Time	Video signal	Audio signal
1	10 min	Stair-step	6 kHz
2	5 min	———	3 kHz
3	10 min	Color bar	1 kHz
4	3 min	RF sweep	———

Table 7-1.

7-1-5. Specified I/O Level and Impedance

Input/output terminal

Video inputs	LINE IN: phono jacks EURO-AV: 21-pin (Pin ⑳) 1 Vp-p, 75Ω, unbalanced, sync negative
Audio inputs	LINE IN: phono jacks 47 kΩ, –7.5 dBs (0 dBs=0.775 Vrms) EURO-AV: 21-pin (Pin ② and ⑥) More than 10 kΩ, –4 dBs
Video outputs	LINE OUT: phono jack EURO-AV: 21-pin (Pin ⑲) 1 Vp-p, 75Ω, unbalanced sync negative
Audio outputs	LINE OUT: phono jack –7.5 dBs at load impedance 47 kΩ Output impedance: less than 10 kΩ EURO-AV: 21-pin (Pins ① and ③) Output impedance: less than 1 kΩ –4 dBs with 10 kΩ load

7-1-6. Operating Method When the Front Panel Removed

When adjust with the front panel (SW BLOCK, JOG/SHUTTLE, TK-17 board and TK-18 board) removed, connect the resisters as shown below and operate with the remote commander.

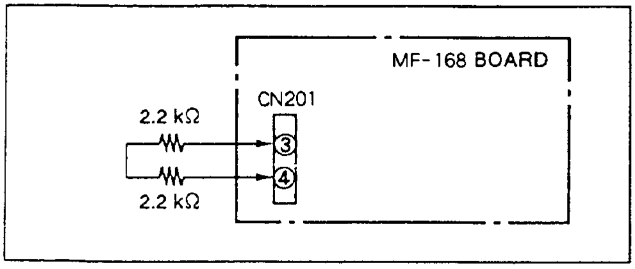
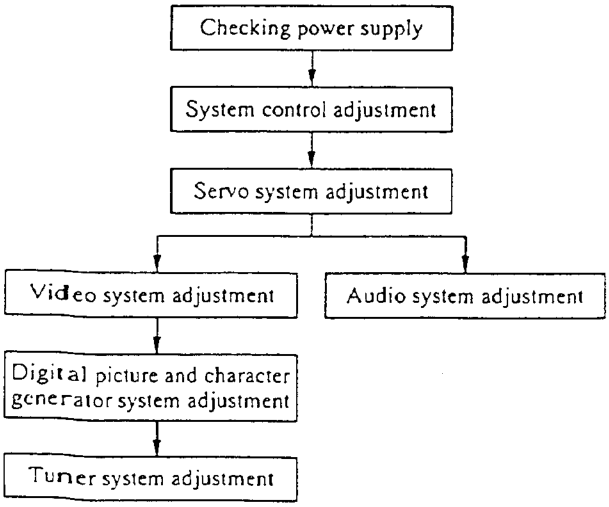

MF-168 BOARD
CN201
2.2 kΩ
③
④
2.2 kΩ

Fig. 7-3.

7-1-7. Adjusting Sequence

Make the electrical adjustment in the following sequence.


Checking power supply
System control adjustment
Servo system adjustment
Video system adjustment
Audio system adjustment
Digital picture and character generator system adjustment
Tuner system adjustment

7-2. POWER SUPPLY CHECK (POWER BLOCK)

Mode	E-E
Measuring instrument	Digital voltmeter
UNSW 6V check	
Measurement point	Pin⑤of CN1
Specified value	6 ± 0.25Vdc
UNSW – 30V check	
Measurement point	Pin⑩of CN2
Specified value	– 30.0 ± 2.5Vdc
UNSW 6V check	
Measurement point	Pin⑪of CN2
Specified value	6.0 ± 0.6Vdc
SW 5V check	
Measurement point	Pin⑥of CN1
Specified value	5.00 $\pm^{0.15}_{0.10}$Vdc
SW 9V check	
Measurement point	Pin④of CN1
Specified value	9.0 ± 0.3Vdc
UNSW 12V check	
Measurement point	Pin③of CN1
Specified value	12.0 ± 0.1Vdc
MTR 12V check	
Measurement point	Pin①of CN2
Specified value	12.0 ± 0.3Vdc
UNSW 35V check	
Measurement point	Pin①of CN1
Specified value	35V ± 3.0Vdc

Checking method:

1) Confirm that each voltage meets its specified value.

POWER BLOCK (Conductor side)

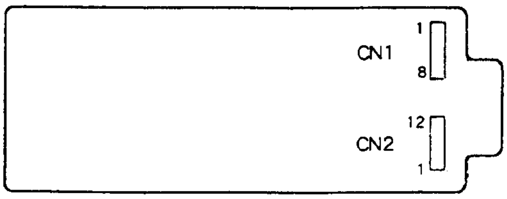

CN1
1
8
12
CN2
1

Fig. 7-4.

7-3. SYSTEM CONTROL ADJUSTMENT

7-3-1. Clock Adjustment (MF-167 BOARD)

Measurement point	Pin⑧of IC601
Measuring Instrument	Interval counter
Adjusting Element	CV601
Specified Value	0.1249995 ± 0.0000005 sec

Connection:

1) Make the circuit below and supply the generated voltage to IC601 pin④.

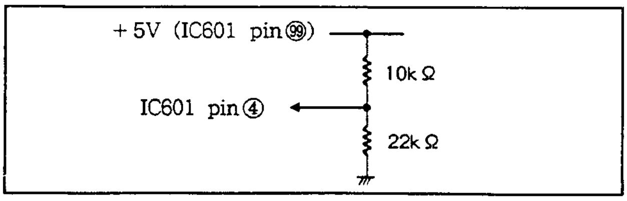

+5V (IC601 pin(99))
10kΩ
IC601 pin④
22kΩ

Fig. 7-5-1.

Adjusting method:

1) Pass a 9-state binary counter through Pin ⑧ of IC601 to divide the 4096 Hz frequency nine times and transform to 8 Hz. Measure the cycle.
2) Adjust CV601 so that an 8 Hz cycle equals 0.1249995 ± 0.0000005 sec.

Note: Do not adjust CV601 except when replacing microcomputers.

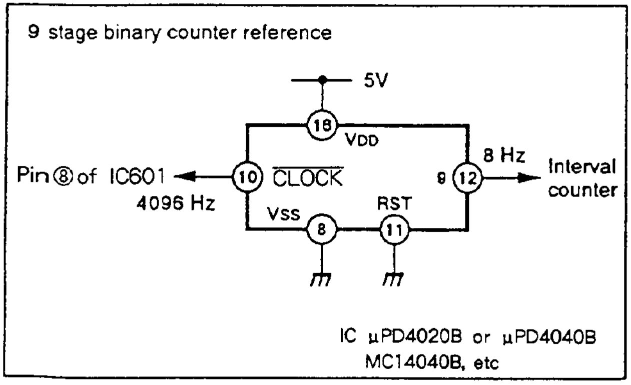

9 stage binary counter reference
5V
16
VDD
Pin⑧of IC601
4096 Hz
10
CLOCK
8 Hz
9
12
Interval counter
VSS
8
RST
11
IC µPD4020B or µPD4040B
MC14040B, etc

Fig. 7-5-2.

7-4. SERVO SYSTEM ADJUSTMENT

7-4-1. Switching Position Adjustment (MA-140 Board)

Mode	PB
Signal	Alignment tape: SP stair-step section
Measurement point	CH1 : VIDEO OUT (LINE OUT) CH2:Pin②of CN919(RF SWP)/MA-140
Measuring Instrument	Oscilloscope
Adjusting Element	RV401
Specified Value	6.5 ± 0.5H (416 ± 32 µsec)

Adjusting method:

1) Once set to STOP mode, then to PB mode.
2) Check that the switching position is 6.5 ± 0.5H. (416 ± 32 µsec)
   If not meet the specified value, turn RV401 and repeat steps 1) to 2).

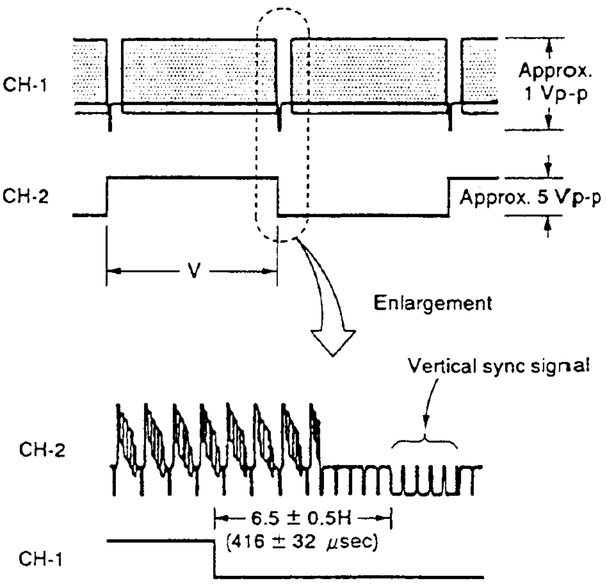

CH-1
Approx. 1 Vp-p
CH-2
Approx. 5 Vp-p
V
Enlargement
Vertical sync signal
CH-2
6.5 ± 0.5H
(416 ± 32 µsec)
CH-1

Fig. 7-6.

7-5. VIDEO SYSTEM ADJUSTMENT

Adjust the video system in the following sequence as a rule. The color video signal supplied from the pattern generator is used as a video input signal for video system adjustment in the recording mode.
Make sure that sync and color burst signals meet requirements specified at setup of adjustment shown in Fig. 7-2.

[Adjusting sequence]

7-5-1. Playback Y Signal Level Adjustment
7-5-2. Y Signal NR Level Adjustment
7-5-3. Sync AGC Adjustment
7-5-4. Sync Tip Carrier Set and Deviation Adjustment
7-5-5. White Clip, Dark Clip Adjustment
7-5-6. Recording Y Signal Level Adjustment
7-5-7. Recording Chroma Level Adjustment
7-5-8. PAL JOG AFC Adjustment
7-5-9. 0.5H CCD Level Adjustment
7-5-10. SECAM Discrimination Adjustment

7-5-1. Playback Y Signal Level Adjustment (YC-124 Board)

Mode	PB
Signal	Alignment tape: SP color bar section
Measurement Point	VIDEO LINE OUT terminal
Measuring Instrument	Oscilloscope
Adjusting Element	RV108
Specified Value	1.00 ± 0.05 Vp-p

Note: 1) Make this adjustment with the EDIT ON/OFF button set to off.
2) VIDEO LINE OUT terminal must be terminated at 75Ω ± 1%.

Adjusting method:
1) With RV108, adjust the VIDEO signal level to 1.00 ± 0.05 Vp-p.

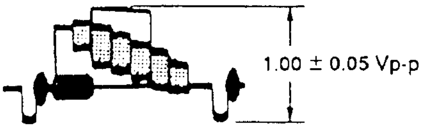


Fig. 7-7.

7-5-2. Y Signal NR Level Adjustment (YC-124 Board)

Mode	PB
Signal	Alignment tape: SP color bar section
Measurement Point	Pin ⑩ of IC101
Measuring Instrument	Oscilloscope
Adjusting Element	RV107
Specified Value	Less than 30mVp-p or minimum

Adjusting method:
1) Adjust to eliminate level differences for each H step with RV107.

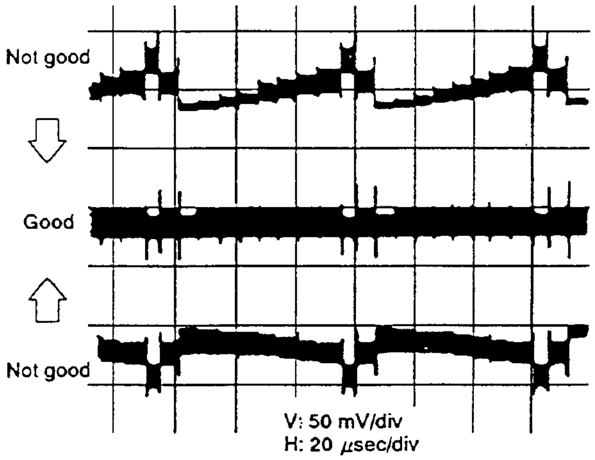


Fig. 7-8.

7-5-3. Sync AGC Adjustment (YC-124 Board)

Mode	E-E
Signal	Color bar
Measurement Point	VIDEO LINE OUT terminal
Measuring Instrument	Oscilloscope
Adjusting Element	RV101
Specified Value	1.00 ± 0.05 Vp-p

Note: VIDEO LINE OUT terminal must be terminates at 75Ω .

Adjusting method:
1) With RV101, adjust the VIDEO signal level to 1.00 ± 0.05 Vp-p.

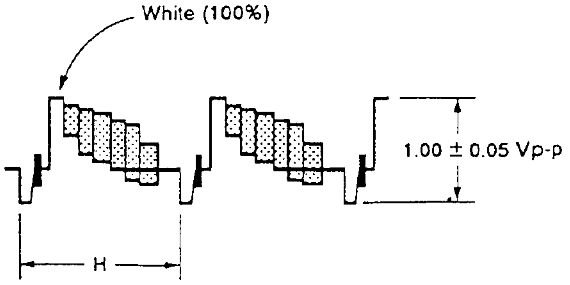


Fig. 7-9. SYNC AGC adjustment

7-5-4. Sync Tip Carrier Set and Deviation Adjustment (YC-124 Board)

Before starting the adjustment, be sure to check that recording Y signal level adjustment has been completed.

Sync tip carrier set	
Mode	E-E
Signal	No signal (Note 2)
Measurement Point	Pin㉔of IC101
Measuring Instrument	Frequency counter
Adjusting Element	RV103
Speified Value	3.80 ± 0.05MHz
Deviation adjustment	
Mode	REC and PB
Signal	Colour bars
Measurement Point	VIDEO LINE OUT terminal
Measuring Instrument	Osilloscope
Adjusting Element	RV102
Speified Value	1.00 ± 0.05Vp-p

Note 1) VIDEO LINE OUT terminal must be terminated at 75Ω.

2) To make no signal input, insert a shorting plug into VIDEO LINE IN 2 terminal.

Adjusting method:

1) Make a no signal state and select the E-E made.
2) Connect the frequency counter to the Pin ㉔ of IC101 and adjust to 3.80 ± 0.05MHz with RV103.
3) Input the color bar signal to make recording.
4) Playback the recorded tape portion and check that the playback Y signal level is 1.00 ± 0.05 Vp-p.

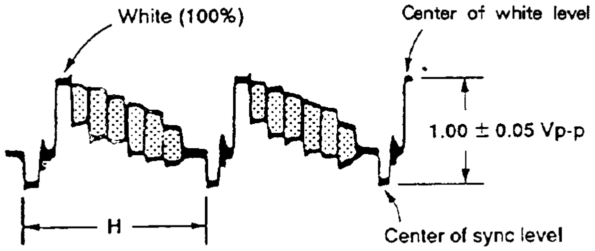


Fig. 7-10. Deviation adjustment

5) When the specified value is not met, input the color bar signal to select the E-E mode. Adjust RV102 to correct a playback Y signal level error, and then, repeat the steps 1) through 4) above.

7-5-5. White Clip, Dark Clip Adjustments (YC-124 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin ⑳ of IC101
Measuring Instument	Oscilloscope
Adjusting Element	White clip : RV105 Dark clip : RV104
Specified Value	White clip : 180 ± 10% Dark clip : 40 ± 10%

Adjusting method:

1) With RV105, adjust the white clip level to 180 ± 10% of the white level (100%)
2) With RV104, adjust the dark clip level to 40 ± 10% of the white level (100%)

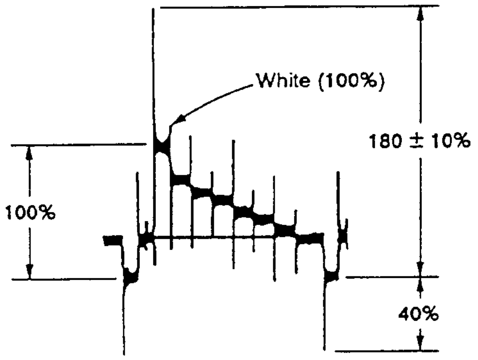


Fig. 7-11.

7-5-6. Recording Y Signal Level Adjustment (YC-124 Board)

Mode	REC
Signal	No signal
Measurement Point	Pin③of CN301 (YC-124)
Measuring Instument	Oscilloscope
Adjusting Element	RV110 (YC-124 board)
Specified Value	300 ± 10 mV

Adjusting method:

1) With RV110, adjust the Y REC RF signal level to 300 ± 10mV

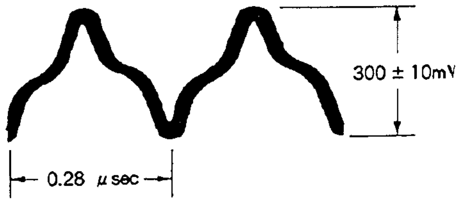


Fig. 7-12.

7-5-7. Recording Chroma Level Adjustment (YC-124 Board)

Mode	E-E
Signal	Color ber
Measurement Point	Pin⑧of CN301
Measuring Instument	Oscilloscope
Adjusting Element	RV301
Specified Value	120 ± 10 mVp-p

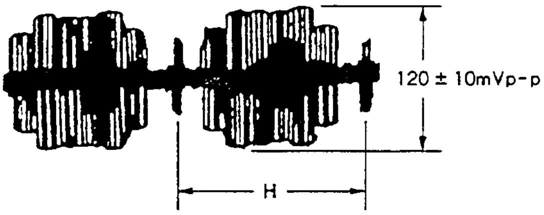


Fig. 7-13.

7-5-8. PAL JOG AFC Adjustment (YC-124 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin⑲of IC360
Measuring Instument	Digital voltmeter
Adjusting Element	RV360
Specified Value	2.65 ± 0.05 Vdc

Adjusting method :

1) Adjust RV360 so that the voltage at Pin ⑲ of IC360 become 2.65 ± 0.05Vde.
   At this time confirm that the cycle of delta wave at Pin ⑳of IC360 is 32 μsec.

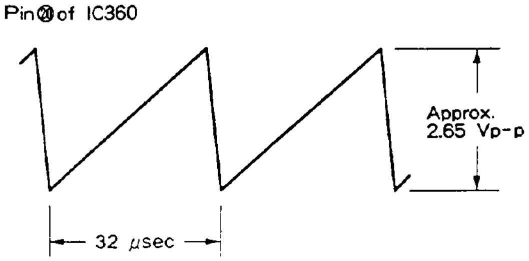


Fig. 7-14.

7-5-9. 0.5H CCD Level Adjustment (YC-124 Board)

Mode	E-E
Signal	Color bar
Measurement Point	Pin①of IC362
Measuring Instument	Oscilloscope
Adjusting Element	RV361
Specified Value	Same signal level with Pin ⑥ of IC362.

Adjusting method :

1) Measure the signal level at Pin⑥of IC362. (Approx. 2 Vp-p)
2) Adjust RV361 so that the signal levels at Pins①and⑥ of IC362 become same.

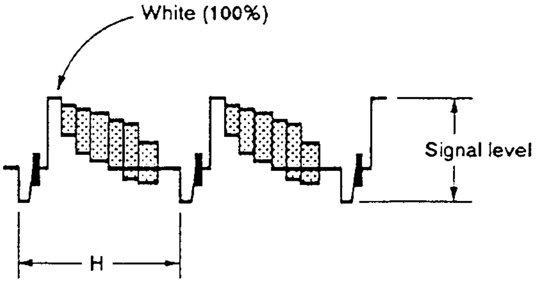


Fig. 7-15.

7-5-10. SECAM Discrimination Adjustment (YC-124 Board) (SLV-825B Only)

Mode	E-E
Signal	SECAM Color bar
Measurement Point	Pin⑨of IC450
Measuring Instument	Oscilloscope
Adjusting Element	RV450
Specified Value	4.5 ± 0.1 Vp-p

Adjusting method :

1) Adjust RV450 so that the amplitude of 1/2 fH waveform becomes 4.5 ± 0.1 Vp-p.

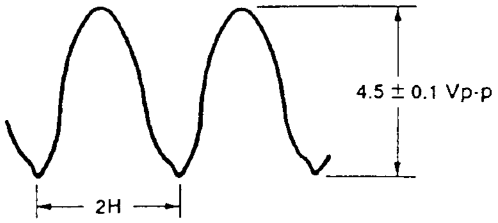


Fig. 7-16.

7-5-11. SECAM Sync. Gate Timing Adjustment (YC-124 Board)

Mode	E-E
Signal	SECAM Colour bars
Measurement Point	CH1 : VIDEO OUTPUT CH2 : CN301 Pin⑧ (YC-124 board)
Measuring Instrument	Osilloscope
Adjusting Element	RV402
Speified Value	T2 = 0 ± 0.3 μsec

Adjusting method :

1) Adjust with RV402 so that the color bar signal on VIDEO OUTPUT terminal becomes to the specified value.

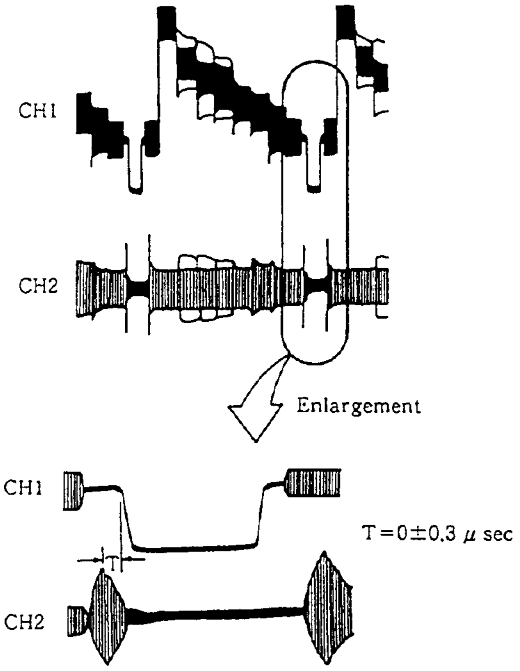


Fig. 7-17.

7-5-12. SECAM Bell Filter Adjustment (YC-124 Board)

Mode	PB
Signal	SECAM Colour bars
Measurement Point	IC401㉕
Measuring Instrument	Osilloscope
Adjusting Element	FL402
Speified Value	Same level of colour bars

Adjusting method :

1) Adjust FL402 so that levels of colour bars become the same.

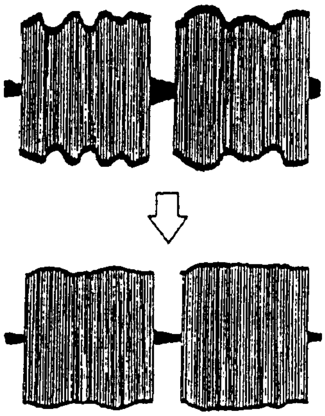


Fig. 7-18.

7-5-13. SECAM Recording Chroma Level Adjustment (YC-124 Board)

Mode	E-E
Signal	SECAM Colour bars
Measurement Point	CN301 ⑧
Measuring Instrument	Osilloscope
Adjusting Element	RV401
Speified Value	100 ± 10mVp-p

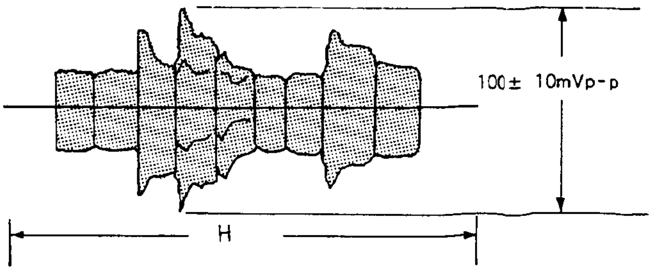


Fig. 7-19.

7-6. DIGITAL PICTURE AND CHARACTER GENERATOR SYSTEM ADJUSTMENTS

- Connect the monitor TV to EURO-AV connector (Pin ⑲ of CNJ902 on MA-140 board), then perform the adjustment.

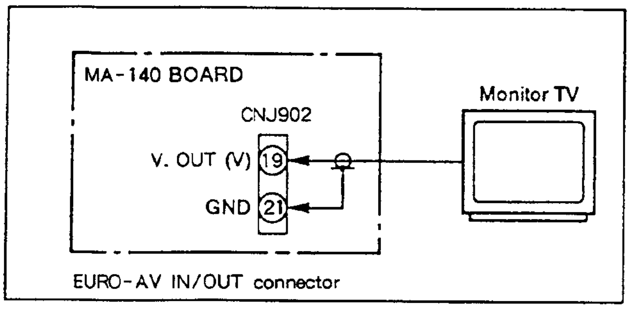

MA-140 BOARD
CNJ902
V. OUT (V)
19
GND
21
Monitor TV
EURO-AV IN/OUT connector

Fig. 7-20.

7-6-1. Read Clock Adjustment (DG-11 Board)

Mode	E-E (EDIT MONITOR)
Signal	Color bar
Measurement Point	EURO AV IN/OUT connector
Measuring Instrument	Monitor TV
Adjusting Element	T102
Specified Value	A=B

Adjusting method:

1) Adjust T102 so that the child pictures are positioned symmetrically.
   Note: Adjust the character position following the steps in "Character Position Adjustment".

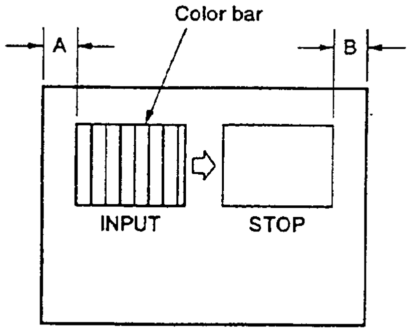

Color bar
A
B
INPUT
STOP

Fig. 7-21.

7-6-2. Write Clock Adjustment (DG-11 Board)

Mode	E-E
Signal	Color bar
Measurement Point	EURO AV IN/OUT connector
Measuring Instrument	Monitor TV
Adjusting Element	T101
Specified Value	A=B

Adjusting method:

1) Adjust T101 so that the image center of the child picture in INPUT side matches with the child picture frame center.

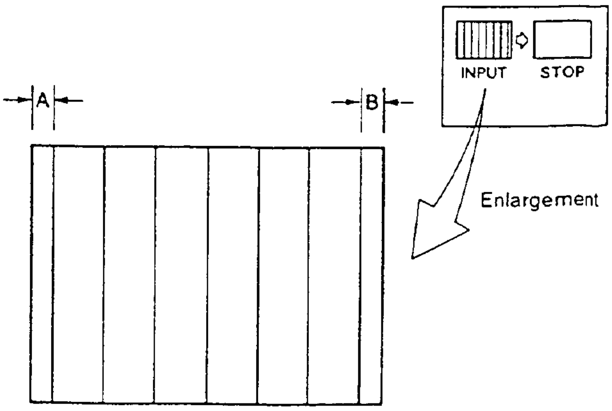

INPUT
STOP
A
B
Enlargement

Fig. 7-22.

7-6-3. TINT Adjustment (DG-11 Board)

Mode	E-E (EDIT MONITOR)
Signal	Color bar
Measurement Point	Pin ⑰ of IC102
Measuring Instrument	Oscilloscope
Adjusting Element	RV104
Specified Value	A=B

Adjusting method:

1) Adjust RV104 so that the level A and level B become same.

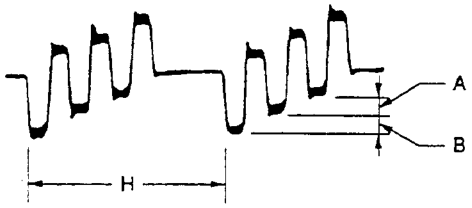


Fig. 7-23.

7-6-4. Clamp Level Adjustment (DG-11 Board)

Mode	PB (P in P)
Signal	Color bar
Measurement Point	Pin ⑥ of CN101
Measuring Instrument	Oscilloscope
Adjusting Element	RV101
Specified Value	A=0V

Adjusting method:

1) Adjust RV101 so that the pedestal levels of parent picture match with the levels of child picture.

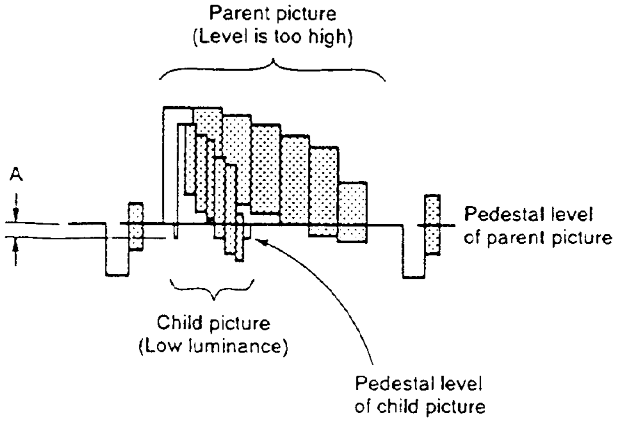


Fig. 7-24.

7-6-5. Hue and Color Level Adjustment (DG-11 Board)

Mode	E-E (P in P)
Signal	Color ber
Measurement Point	EURO AV IN/OUT connector
Measuring Instument	Vectorscope
Adjusting Element	Hue : RV103 Color Level : RV102
Specified Value	The chroma luminance points in parent and child pictures should be overlapped.

Adjusting method:

1) Turn RV102 and RV103 alternately and match the chroma luminance point (higher luminance) of parent picture with the chroma luminance point (lower luminance) of child picture.

7-6-6. Character Generator Clock Check (CG-15 Board)

Mode	E-E
Signal	No signal
Measurement Point	Pin㉘of IC602
Measuring Instument	Frequency counter
Specified Value	17.734476MHz ± 100Hz

Note: Attach 10 kΩ register to tip of the probe.

Checking method:

1) Confirm that the clock oscillation frequency is 17.734476 MHz ± 100 Hz.

7-6-7. AFC Adjustment (CG-15 Board)

Mode	E-E
Signal	No signal
Measurement Point	Pin⑧of IC603
Measuring Instument	Oscilloscope
Adjusting Element	RV601
Specified Value	15625 ± 50Hz

Connection :

1) Connect Pins①and⑨of IC603 with 1k Ω resistance.

Adjusting method :

1) Adjust RV601 so that the oscillation frequency is 15625 ± 50Hz.

7-6-8. Character Position Adjustment (CG-15 Board)

Mode	E-E (EDIT MONITOR)
Signal	Color bar
Measurement Point	EURO AV IN/OUT connector
Measuring Instrument	Monitor TV
Adjusting Element	CV601
Specified Value	A=B

Note: Perform this adjustment after "Write Clock Adjustment".

Adjusting method :

1) Adjust CV601 so that the arrow mark is positioned at the center between the child pictures.

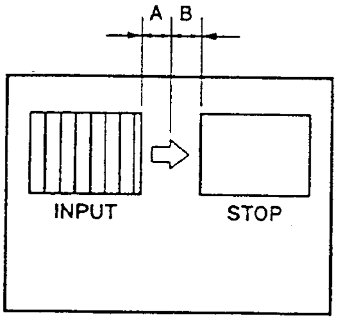


Fig. 7-25.

7-7. AUDIO SYSTEM ADJUSTMENTS

- Adjust the audio system in the LP mode, unless otherwise specified.
  Use the alignment tape.
- Adjust both Lch and Rch.
- Audio system adjustments consist of section 7-7-1. Hi-Fi Audio adjustment and 7-7-2. Normal Audio Adjustment.

[Connection]

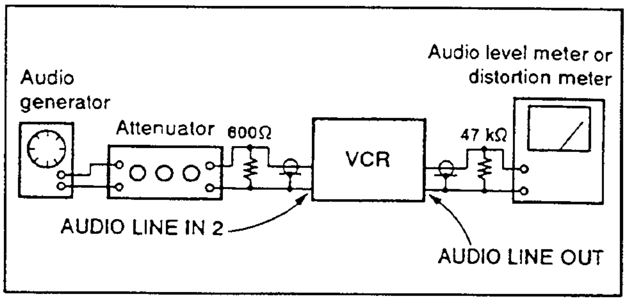


Fig. 7-26.

7-7-1. Hi-Fi Audio System Adjustment

- Set Switches and knobs to the following positions to make adjustment unless otherwise specified.
  INPUT SELECT switch···· LINE 2
  REC LEVEL knob·········· Set to −21 dBs.

- When the tuner block is obstructive for adjustment, remove it.

[Adjusting sequence]

1. NTSC VCO fo adjustment
2. PAL VCO fo adjustment
3. NTSC BPF fo adjustment
4. PAL BPF fo adjustment
5. AF Switching Position adjustment
6. Hi-Fi/Normal Detect adjustment
7. Playback Level adjustment
8. Record VR (Left channel) Control adjustment
9. Record VR (Right channel) Control adjustment

1. NTSC VCO f_0 adjustment (HF-26 board)

Mode	Recording, NTSC mode
Signal	No signal (HF-26 CN202 Pin ② : L)
Measuring instrument	Frequency counter
LEFT channel (1.3 MHz) Adjustment	
Measurement point	IC201 Pin (79)/HF-26
Adjusting element	RV202
Specified value	1.300 MHz ± 1 KHZ
RIGHT channel (1.7 MHz) Adjustment	
Measurement point	IC201 Pin (69)/HF-26
Adjusting element	RV205
Specified value	1.700 MHz ± 1 kHz

Note : Connect the frequency counter through a probe of high input impedance (more than 10 MΩ) and low capacity (10 pF or less).

Checking method :

1) Connect the frequency counter to each measurement point.

2) Confirm that each frequency meet its specified value.

2. PAL VCO f_0 adjustment (HF-26 board)

Mode	Recording, PAL mode
Signal	No signal (HF-26 CN202 Pin ② : H)
Measuring instrument	Frequency counter
LEFT channel (1.4 MHz) Adjustment	
Measurement point	IC201, Pin (79)/HF-26
Adjusting element	RV207
Specified value	1.400 MHz ± 1 kHz
RIGHT channel (1.8 MHz) Adjustment	
Measurement point	IC201, Pin (69)
Adjusting element	RV209
Specified value	1.800 MHz ± 1 kHz

Note : Connect the frequency counter through a probe of high input impedance (more than 10 MΩ) and low capacity (10 pF or less).

Checking method :

1) Connect the frequency counter to each measurement point.

2) Confirm that each frequency meet its specified value.

3. NTSC BPF f_0 adjustment (HF-26 board)

Mode	NTSC, PB mode
Signal	1.720 MHz sine wave
Measuring instrument	Oscilloscope
Measurement point	HF-26, IC201, Pin (78)
Adjusting element	RV204
Specified value	Minimum amplitude as shown

Adjusting method :

1) Set the NTSC PB switch to ON.

2) Input the sine wave signal of 1.720 MHz, 70 mV to CN202 Pin ⑨ from signal generator. (no modulated signal)

3) Adjust RV204 for the minimum amplitude.

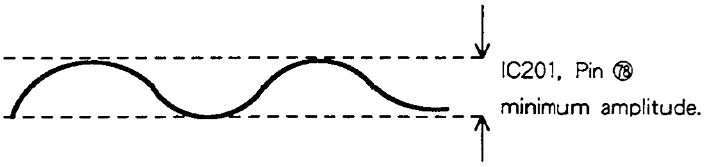


Fig. 7-27.

4. PAL BPF f_0 adjustment (HF-26 board)

Mode	PAL, PB mode
Signal	1.840 MHz sine wave
Measuring instrument	Oscilloscope
Measurement point	HF-26, IC201, Pin (78)
Adjusting element	RV208
Specified value	Minimum amplitude as shown

Adjusting method :

1) Input the sine wave signal of 1.840 MHz, 70 mV CN202 Pin ⑨ from signal generator. (no modulated signal)

2) Adjust RV208 for the minimum amplitude.

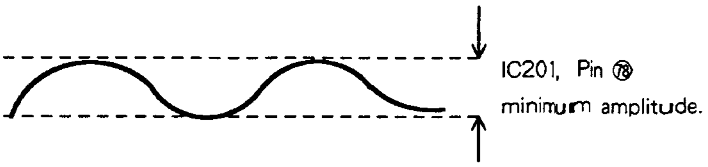


Fig. 7-28.

5. AF Switching Position adjustment (MA-140 board)

Mode	PB
Signal	Alignment tape (MH-2)
Measuring instrument	Oscilloscope
Measurement point	MA-140, CN901, Pin ⑥
Adjusting element	RV400
Specified value	Minimum amplitude

Adjusting method :

1) Playback the alignment tape (MH-2).
2) Press MANUAL of TRACKING button. Press both [+] and [−] keys of TRACKING simultaneously to obtain the center position of TRACKING.
3) Trigger oscilloscope by RP-147, CN803 Pin ⑤ (RF SW'G pulse).
4) Adjust RV400 to minimize A.

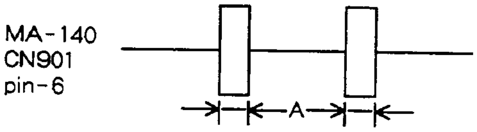


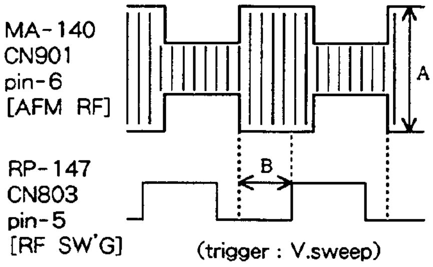
Fig. 7-29.

6. Hi-Fi/Normal Detect adjustment (MA-140 board)

Mode	PB
Signal	Alignment tape (HiFi 400 Hz)
Measuring instrument	Oscilloscope
Measurement point	MA-140, CN901, Pin ⑥
Adjusting element	RV201
Specified value	300 mV ± 10 mVp-p

Adjusting method :

1) Press MANUAL of TRACKING button. Obtain the maximum AFM RF level by adjusting TRACKING control.
2) Connect oscilloscope to MA-140, CN901 Pin ⑥, and is triggered by RP-147, CN803 Pin⑤ (RF SW'G pulse).
3) Adjust RV201/MA-140 for 300 mV ± 10 mVp-p, in the side B.



A = 300mV ± 10mV (p-p)

Fig. 7-30.

7. Playback Level adjustment (HF-26 board)

Mode	PB
Signal	Alignment tape (HiFi 400 Hz)
Measurement point	Lch : AUDIO LINE OUT L Rch : AUDIO LINE OUT R
Measuring instrument	Audio level meter
Adjusting element	Lch : RV201 Rch : RV206
Specified value	− 7.5 ± 0.1 dBs

Adjusting method :

1) Adjust a playback level to -7.5 ± 0.1 dBs for both L and R channels with RV201 and RV206 respectively.

8. Record VR (Left channel) Control adjustment (MF-167 board)

Mode	Recording
Signal	No signal
Measuring instrument	Digital voltmeter
Measurement point	MF-167, CN601, Pin ⑯
Adjusting element	RV603
Specified value	(voltage at CN601, Pin ⑫) × ½ ± 0.05 V

Adjusting method :

1) Set the RECORD VR (RV601) into the mechanical center [click] position.
2) Adjust RV603 to obtain that Pin ⑯= [voltage at CN601 Pin ⑫= LEVEL VR Vcc] × ½ ± 0.05 V

9. Record VR (Right channel) Control adjustment (MF-167 board)

Mode	Recording
Signal	No signal
Measuring instrument	Digital voltmeter
Measurement point	MF-167, CN601, Pin ⑮
Adjusting element	RV604
Specified value	(voltage at CN601, Pin ⑫) × ½ ± 0.05 V

Adjusting method :

1) Set the RECORD VR (RV602) into the mechanical center [click] position.
2) Adjust RV604 so that Pin ⑮= [voltage at CN601 Pin ⑫ = LEVEL VR Vcc] × ½ ± 0.05 V

7-7-2. Normal Audio System Adjustment

- Make adjustment in the SP mode, unless otherwise specified. Use a normal VHS cassette for an adjustment tape.
- Make adjustment with the switches set to the following positions.
  INPUT SELECT······LINE 2
- Set the AUDIO MONITOR mode to NORMAL on the menu screen.

[Adjusting sequence]

1. ACE head adjustment···See Mechanism Block Adjustment
2. Recording bias adjustment

1. ACE head adjustment

See "Mechanism Block Adjustment".

2. Recording bias adjustment (MA-140 board)

Mode	REC and PB
Signal	333 Hz, − 27.5 dBz 7 kHz, − 27.5 dBs at AUDIO INPUT, LINE 2
Measuring point	AUDIO LINE OUT L or R
Measuring instrument	Audio level meter
Adjusting element	RV701
Specified value	0 ± 1 dB (1 ± 1dB for B model)

Adjusting method :

1) Supply a signal of 333 Hz, − 27.5 dBs to Audio.
2) Connect the audio level meter to the Audio Line Output.
3) Adjust the attenuator so that the audio input level is − 27.5 dBs.
4) Make recording in the SP mode.
5) Set an audio line input signal to 7 kHz and make recording.
6) Playback a recorded position, and measure output levels at 333 Hz and 7 kHz.
7) Confirm that the 7 kHz playback output levels within a range of the 333 Hz playback output level 0 ± 1 dB. When beyond this range, adjust RV701 and repeat the steps 1) through 7) above. (1 ± 1dB for B model)

7-8. TUNER SYSTEM ADJUSTMENTS

7-8-1. RF AGC Adjustment (IF501)

Signal	Broadcast TV signal
Adjusting element	VR of IF unit (Fig. 7-31.)

Adjusting method :

1) Adjust the monitor TV to a maximum contrast.
2) Turn the VR to make snow noise visible.
3) Turn the VR in an opposite direction and set it to the point where the snow noise disappears.
4) Receive each channel and confirm that there are no beat picture corruption snow noise due to cross modulation.

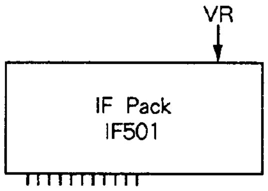


Fig. 7-31.

7-8-2. Receive Separation Adjustment (MA-140 board) (except UB model)

Signal	Stereo Lch : 400 Hz 100% modulation Rch : No modulation
Connect point	AUDIO LINE OUT R
Measuring instrument	Oscilloscope
Adjusting element	RV501

Adjusting method :

1) Set the sound multiplex signal generator in the Stereo mode, and set only Lch to 400 Hz, 100% modulation.
2) Connect the oscilloscope to the Rch of Audio Line Output.
3) Adjust RV501 to minimize Rch output.
   When this is done, do not fully turn RV501. (The "STEREO" indication must be illuminated).

7-9. TRANSCODER (TC-27 Board) ADJUSTMENT

[SECAM Digital Picture Mode Chroma Adjustment]
(SL-825B model only)

- Connect the monitor TV to EURO-AV connector (pin⑲ of CNJ902 on MA-140 board), then perform the adjustment.

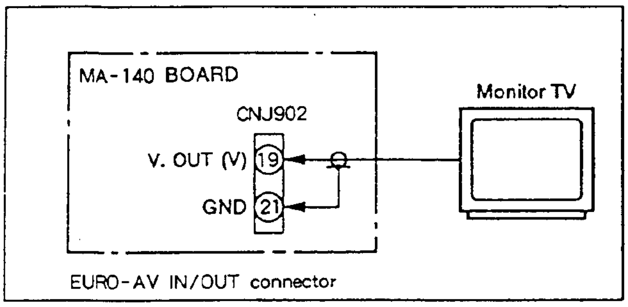


Fig. 7-32.

[Adjusting sequence]

7-9-1. VCO-1 adjustment
7-9-2. VCO-2 adjustment
7-9-3. I-REF-1 adjustment
7-9-4. I-REF-2 adjustment
7-9-5. BELL-1 Filter adjustment
7-9-6. BELL-2 Filter adjustment
7-9-7. B-Y f_0 adjustment
7-9-8. R-Y f_0 adjustment
7-9-9. Colour Output Level adjustment

7-9-1. VCO-1 Adjustment (TC-27 Board)

Mode	E-E
Signal	no input signal
Measuring instrument	frequency counter
Measurement point	IC102, Pin ⑨
Adjusting element	RV101
Specified value	15,625 Hz ± 10 Hz

Adjusting method :

1) Connect frequency counter to IC102, Pin ⑨.
2) Adjust RV101 for 15,625 Hz ± 10Hz

7-9-2. VCO-2 Adjustment (TC-27 Board)

Mode	E-E
Signal	no input signal
Measuring instrument	frequency counter
Measurement point	IC104, Pin ⑨
Adjusting element	RV104
Specified value	15,625 Hz ± 10 Hz

Adjusting method :

1) Connect freqyency counter to IC104, Pin ⑨.
2) Adjust RV104 for 15,625 Hz ± 10Hz

7-9-3. I-REF-1 Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point	CH-1 : IC102, Pin ④ CH-2 : IC102, Pin ⑨
Adjusting element	RV103
Specified value	T = 4.2 ± 0.1 μsec

Adjusting method :

1) Adjust RV103 so that T is 4.2 ± 0.1 μsec.

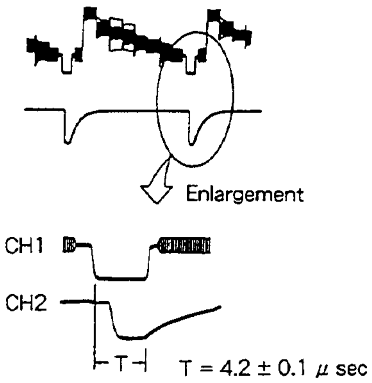

Enlargement
CH1
CH2
T
T = 4.2 ± 0.1 μ sec

Fig. 7-33.

7-9-4. I-REF-2 Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point	CH-1 : IC104, Pin ④ CH-2 : IC104, Pin ⑨
Adjusting element	RV106
Specified value	T = 4.2 ± 0.1 μsec

Adjusting method :

1) Adjust RV106 so that T is 4.2 ± 0.1 μsec.

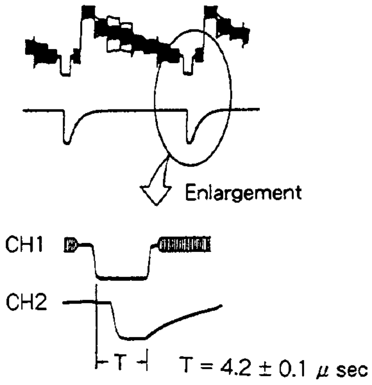

Enlargement
CH1
CH2
T
T = 4.2 ± 0.1 μ sec

Fig. 7-34.

7-9-5. BELL-1 Filter Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point	IC102, Pin ㉛
Adjusting element	LV102
Specified value	Same colour bars level

Adjusting method :

1) Adjust LV102 so that levels of colour bars have the same level.

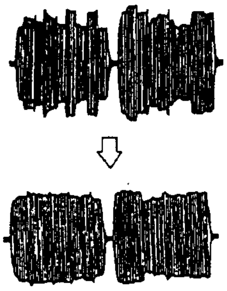


Fig. 7-35.

7-9-6. BELL-2 Filter Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point	IC104, Pin ㉛
Adjusting element	LV105
Specified value	Same colour bars level

Adjusting method :

1) Adjust LV105 so that levels of colour bars have the same level.

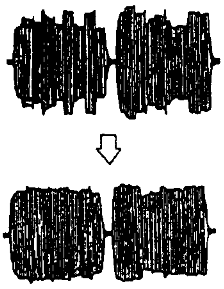


Fig. 7-36.

7-9-7. B-Y f_0 Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point/ Adjusting element	B-Y 1 : IC103 Pin ③ LV103
	B-Y 2 : IC105 Pin ③ LV106
Specified value	within 0.05 Vp-p

Adjusting method :

1) Connect Pin ⑲ and Pin ㉑ of IC102 and IC104, each.
2) Adjust LV103 and LV106 for the level within 0.05Vp-p.

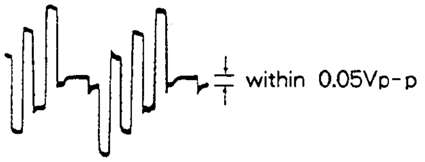


Fig. 7-37.

7-9-8. R-Y f_0 Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point/ Adjusting element	R-Y 1 : IC103 Pin ② LV101
	R-Y 2 : IC105 Pin ② LV104
Specified value	within 0.05 Vp-p

Adjusting method :

1) Connect Pin ⑲ and Pin ㉑ of IC102 and IC104, each.
2) Adjust LV101 and LV104 for the level within 0.05Vp-p.

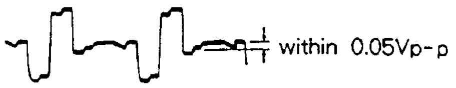


Fig. 7-38.

7-9-9. Colour Output Level Adjustment (TC-27 Board)

Mode	E-E
Signal	Colour bars (SECAM)
Measuring instrument	Oscilloscope
Measurement point/ Adjusting element	COLOR LEVEL 1 : IC103 Pin ③/RV102
	COLOR LEVEL 2 : IC105 Pin ③/RV105
Specified value	within 0.75 ± 0.05 Vp-p

Adjusting method :

1) Connect Pin ⑲ and Pin ㉑ of IC102 and IC104, each.

2) Adjust RV102 and RV105 for 0.75 ± 0.05Vp-p.

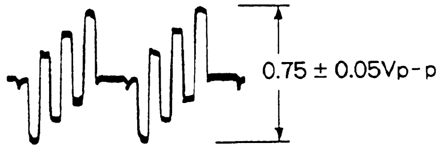
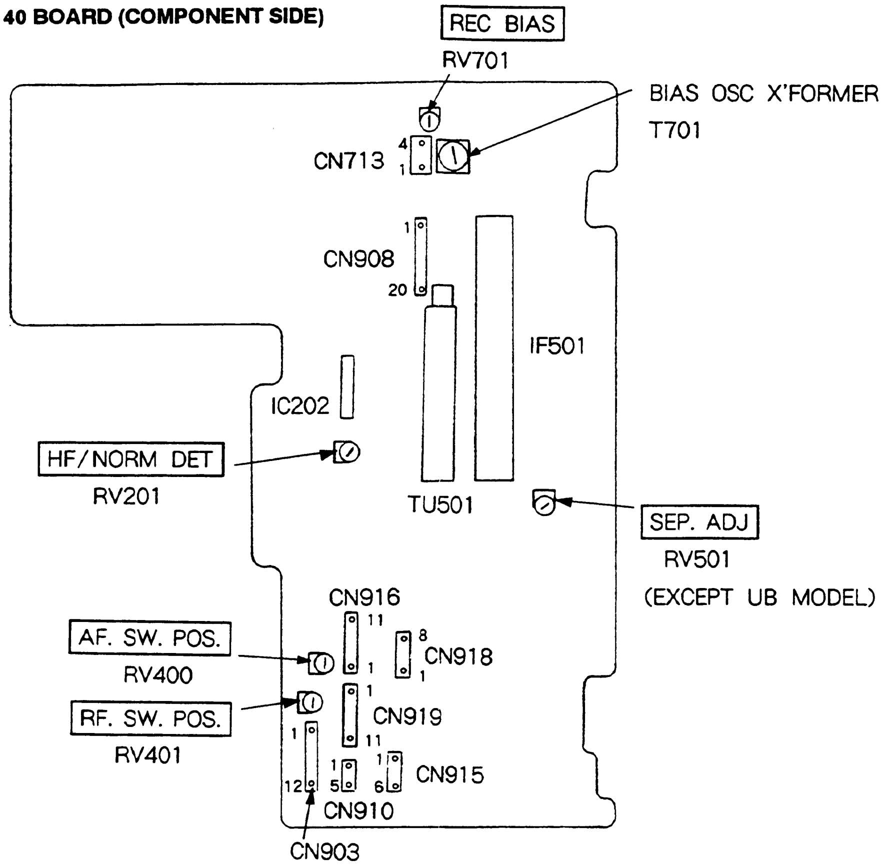


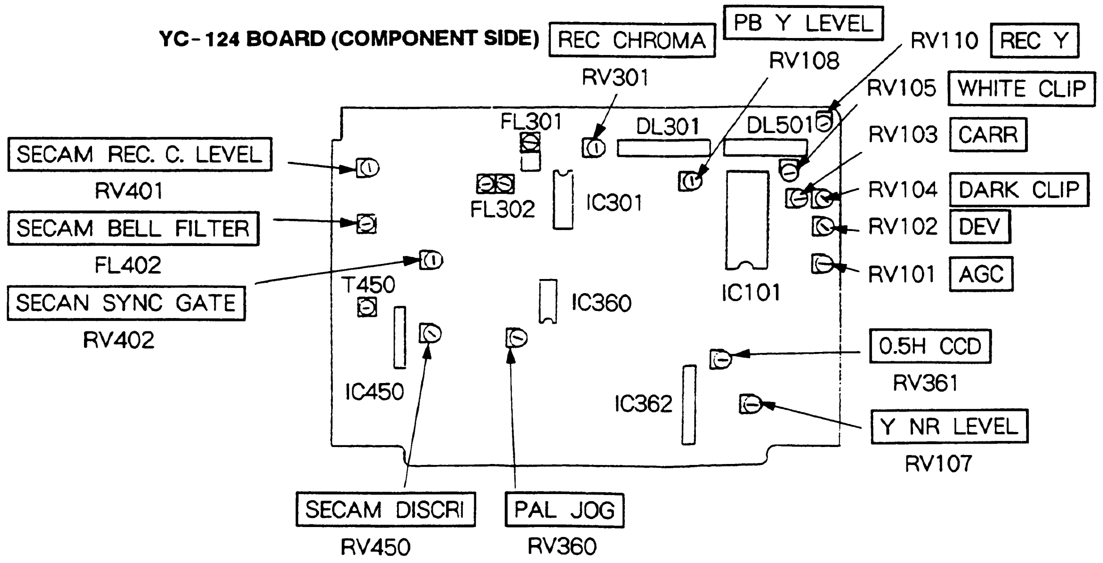
Fig. 7-39.

7-10. ADJUSTMENT PARTS ARRANGEMENT DIAGRAM

MA-140 BOARD (COMPONENT SIDE)

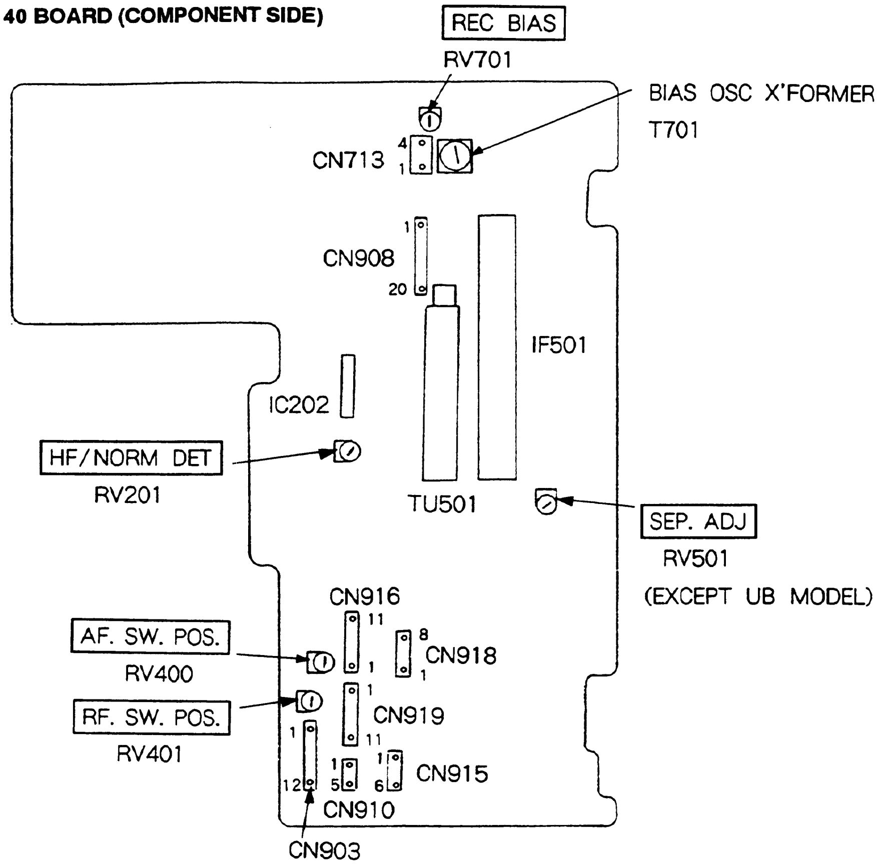

REC BIAS
RV701
BIAS OSC X'FORMER
T701
CN713
4
1
1
CN908
20
IF501
IC202
HF/NORM DET
RV201
TU501
SEP. ADJ
RV501
(EXCEPT UB MODEL)
CN916
11
1
8
CN918
1
AF. SW. POS.
RV400
1
CN919
11
RF. SW. POS.
RV401
1
12
1
5
1
6
CN915
CN910
CN903

YC-124 BOARD (COMPONENT SIDE)

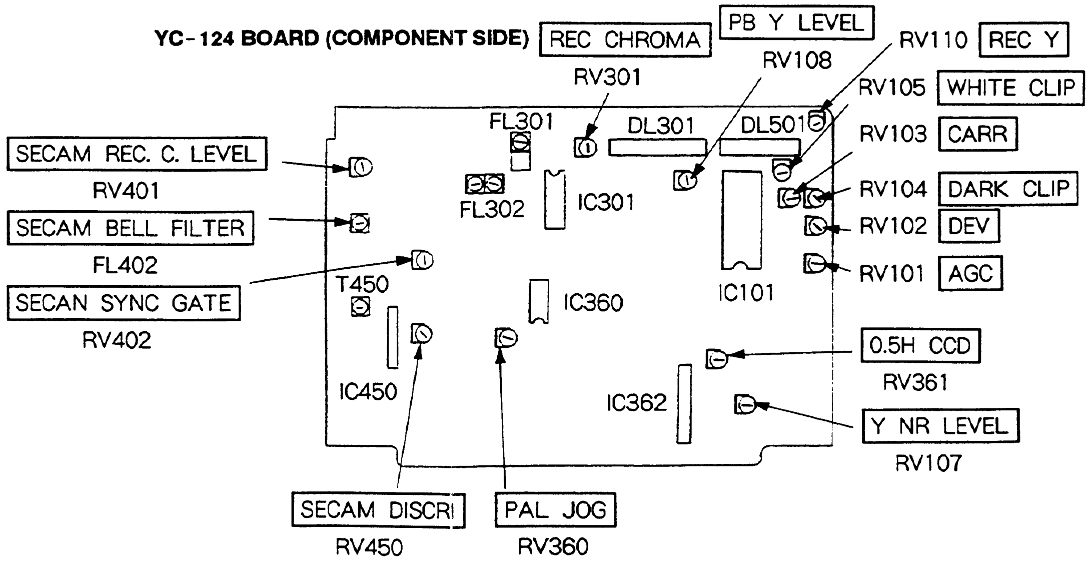

REC CHROMA
RV301
PB Y LEVEL
RV108
RV110
REC Y
RV105
WHITE CLIP
RV103
CARR
RV104
DARK CLIP
RV102
DEV
RV101
AGC
FL301
DL301
DL501
FL302
IC301
IC101
IC360
T450
IC450
IC362
SECAM REC. C. LEVEL
RV401
SECAM BELL FILTER
FL402
SECAN SYNC GATE
RV402
0.5H CCD
RV361
Y NR LEVEL
RV107
SECAM DISCRI
RV450
PAL JOG
RV360

7-10. ADJUSTMENT PARTS ARRANGEMENT DIAGRAM

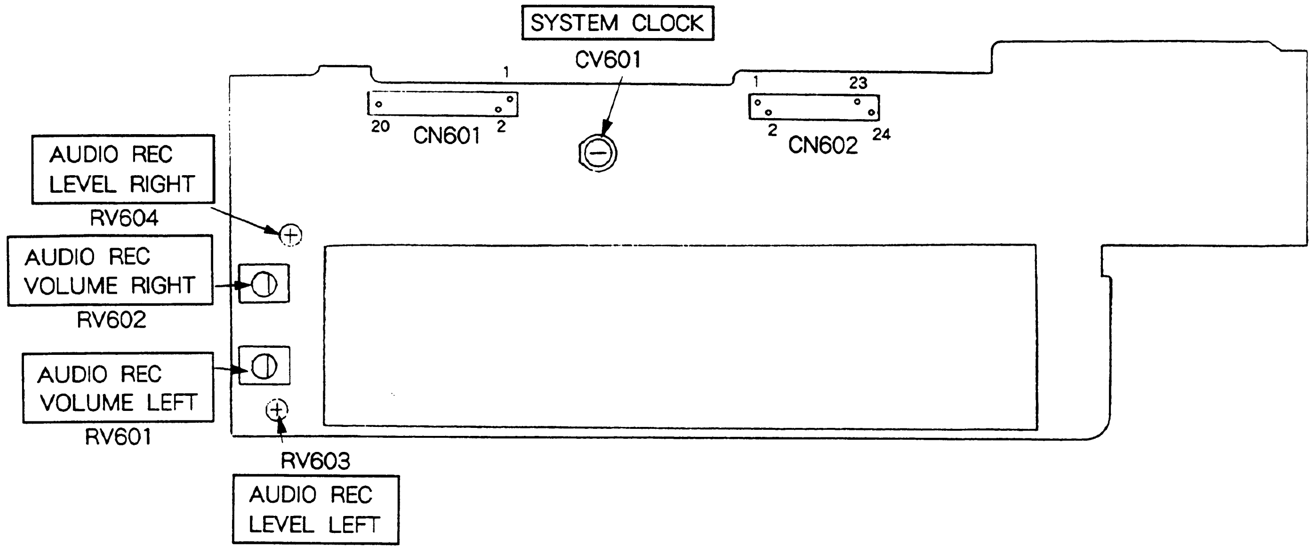
MA-140 BOARD (COMPONENT SIDE)


REC BIAS
RV701
BIAS OSC X'FORMER
T701
CN713
CN908
IF501
IC202
HF/NORM DET
RV201
TU501
SEP. ADJ
RV501
(EXCEPT UB MODEL)
CN916
CN918
AF. SW. POS.
RV400
RF. SW. POS.
RV401
CN919
CN915
CN910
CN903

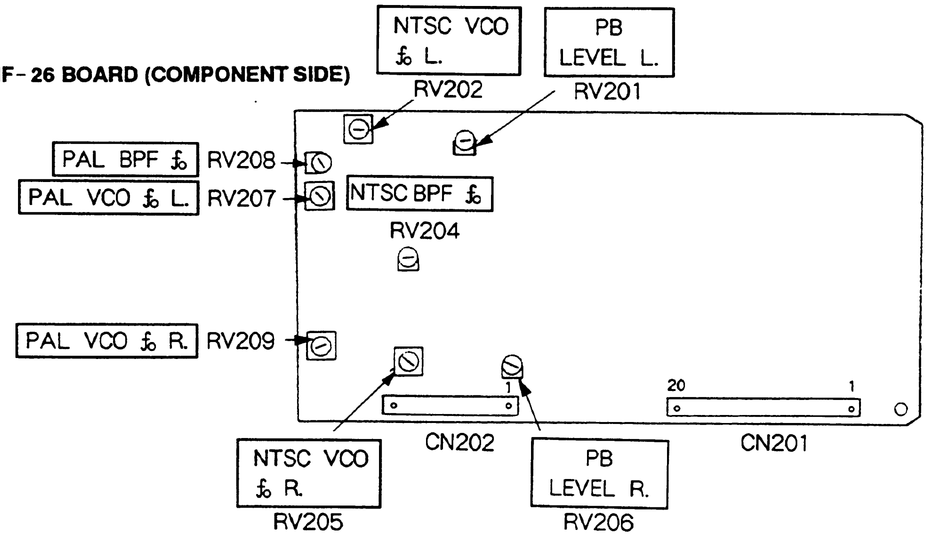
YC-124 BOARD (COMPONENT SIDE)


REC CHROMA
RV301
PB Y LEVEL
RV108
RV110
REC Y
RV105
WHITE CLIP
RV103
CARR
RV104
DARK CLIP
RV102
DEV
RV101
AGC
FL301
DL301
DL501
SECAM REC. C. LEVEL
RV401
FL302
IC301
IC101
SECAM BELL FILTER
FL402
SECAN SYNC GATE
RV402
T450
IC360
IC450
0.5H CCD
RV361
IC362
Y NR LEVEL
RV107
SECAM DISCRI
RV450
PAL JOG
RV360

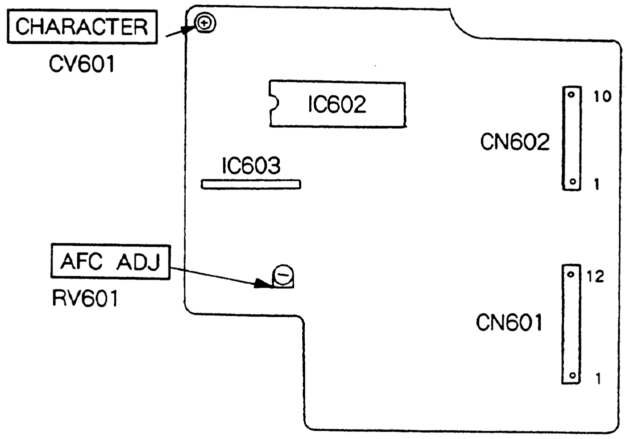
MF-167 BOARD (COMPONENT SIDE)


SYSTEM CLOCK
CV601
CN601
CN602
AUDIO REC LEVEL RIGHT
RV604
AUDIO REC VOLUME RIGHT
RV602
AUDIO REC VOLUME LEFT
RV601
RV603
AUDIO REC LEVEL LEFT

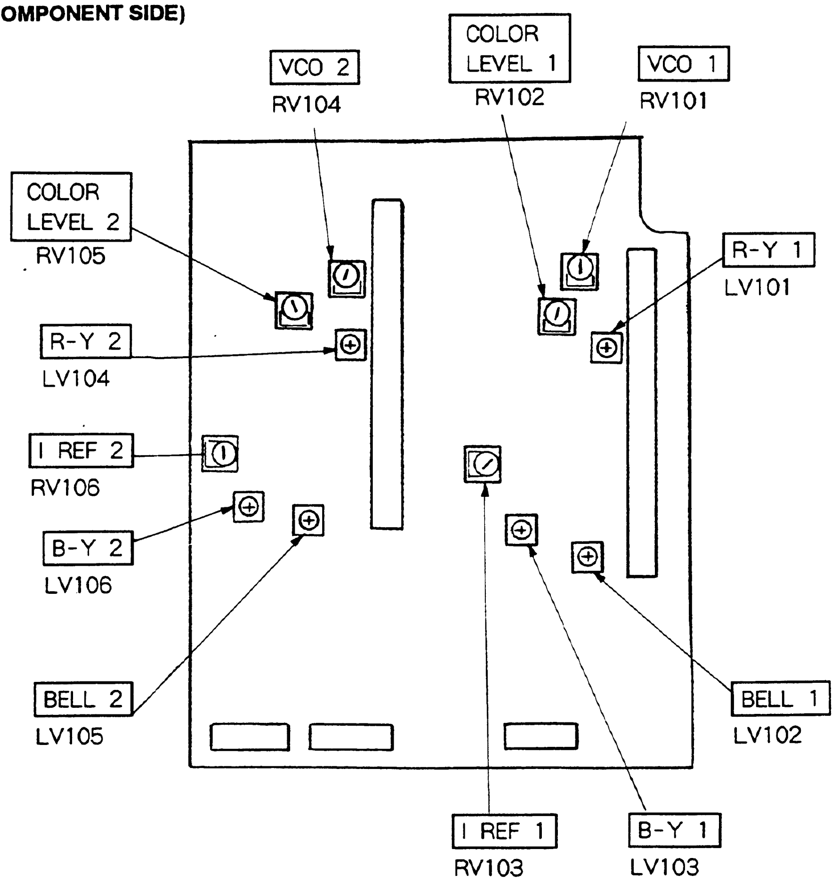
HF-26 BOARD (COMPONENT SIDE)


NTSC VCO fo L.
RV202
PB LEVEL L.
RV201
PAL BPF fo
RV208
PAL VCO fo L.
RV207
NTSC BPF fo
RV204
PAL VCO fo R.
RV209
CN202
CN201
NTSC VCO fo R.
RV205
PB LEVEL R.
RV206

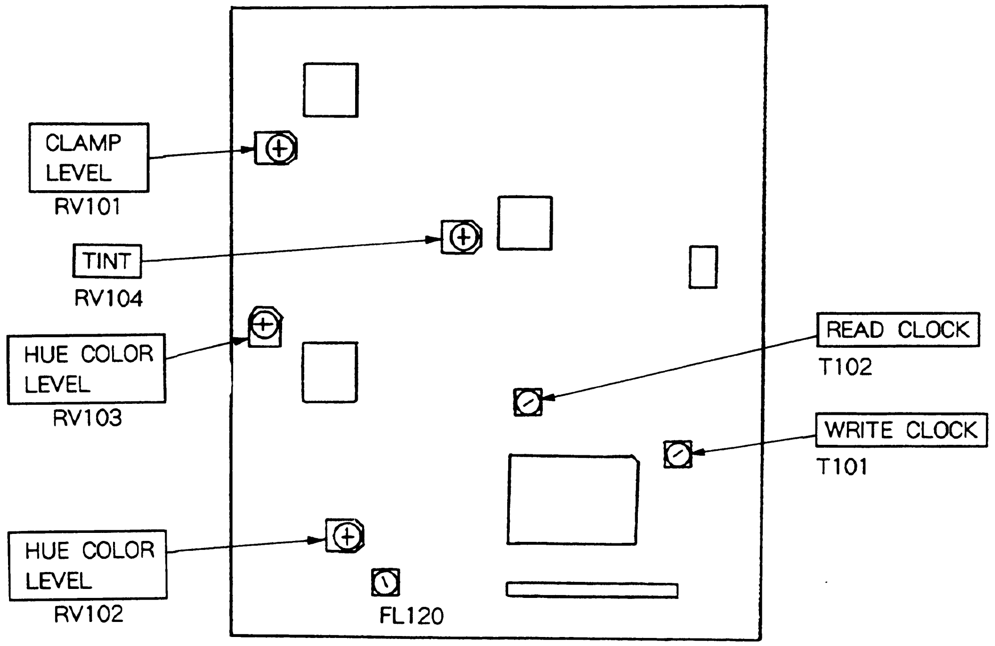
CG-15 BOARD(COMPONENT SIDE)


CHARACTER
CV601
IC602
CN602
IC603
AFC ADJ
RV601
CN601

TC-27 BOARD (COMPONENT SIDE)


VCO 2
RV104
COLOR LEVEL 1
RV102
VCO 1
RV101
COLOR LEVEL 2
RV105
R-Y 1
LV101
R-Y 2
LV104
I REF 2
RV106
B-Y 2
LV106
BELL 2
LV105
BELL 1
LV102
I REF 1
RV103
B-Y 1
LV103

DG-11 BOARD (COMPONENT SIDE)


CLAMP LEVEL
RV101
TINT
RV104
HUE COLOR LEVEL
RV103
HUE COLOR LEVEL
RV102
FL120
READ CLOCK
T102
WRITE CLOCK
T101

MC-Service

Sony Corporation
Home Video Group

English
9211671-1
Printed in Japan

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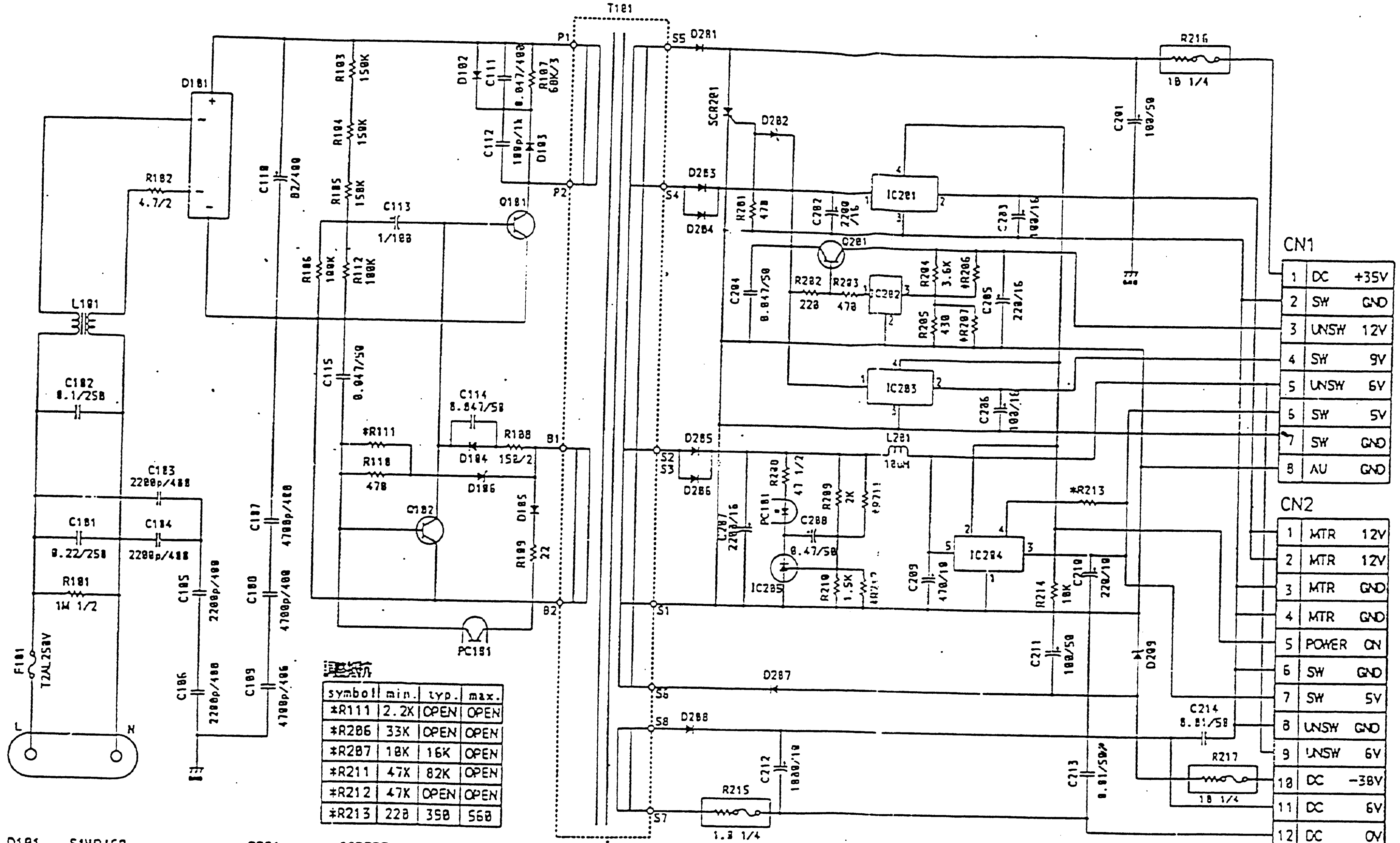
Published by Customer Relations and Service Group

SONY


A
B
C
D
E
F
G
H
1
2
3
4
5
6
SCALE FOR MICROFILM
DRAWING (TYPE D 30)
SONY STANDARD
T101
P1
P2
B1
B2
S1
S2
S3
S4
S5
S6
S7
S8
D101
R102 4.7/2
L101
C102 0.1/250
C103 2200p/400
C101 0.22/250
C104 2200p/400
R101 1M 1/2
F101 T2AL250V
L
N
C105 2200p/400
C106 2200p/400
C110 82/400
C107 4700p/400
C108 4700p/400
C109 4700p/400
R103 150K
R104 150K
R105 150K
R106 100K
R112 100K
C113 1/100
C115 0.047/50
C114 0.047/50
*R111
R110 470
R108 150/2
D104
D106
D105
R109 22
Q102
PC101
D102
C111
0.047/400
R107 68K/3
C112 100p/1k
D103
Q101
D201
SCR201
D202
D203
D204
R201 470
C202 2200/16
IC201
C203 100/16
C201 100/50
Q201
C204 0.047/50
R202 220
R203 470
IC202
R204 3.6K
*R206
R205 430
*R207
C205 220/16
IC203
C206 100/16
D205
D206
L201 10uH
R220 47 1/2
PC101
R209 2K
*R211
C208 0.47/50
C207 220/16
IC205
R210 1.5K
*R212
C209 470/10
IC204
*R213
R214 10K
C210 220/10
C211 100/50
D209
D207
D208
C212 1000/10
R215 1.0 1/4
C213 0.01/50
C214 0.01/50
R216 10 1/4
R217 10 1/4
CN1
1 DC +35V
2 SW GND
3 UNSW 12V
4 SW 9V
5 UNSW 6V
6 SW 5V
7 SW GND
8 AU GND
CN2
1 MTR 12V
2 MTR 12V
3 MTR GND
4 MTR GND
5 POWER ON
6 SW GND
7 SW 5V
8 UNSW GND
9 UNSW 6V
10 DC -30V
11 DC 6V
12 DC 0V

[illegible]

symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	350	560

D101	S1WBA60
D102	ERA15-06 or AM01A
D103	ERA22-08 or EG01C
D104	ERA15-02 or 11ES2
D105	MA165
D106	RD3.0ES or MA4030
Q101	2SC4231
Q102	2SC3377
PC101	ON3171

Q201	2SB733 or 2SA934 or 2SB1434
D201, 207	AU02Z or ERA18-02
D202	RD16JSB or MA4160
D203, 204	S3L20U or ERC91-02 or RL4Z
D205, 206	D3S4M or RK44 or ERC81-004
D208	AK04 or ERA83-004
D209	RD39ES or MA4390

SCR201	2P4M
IC201	PQ12RF13
IC202	M5237L
IC203	PQ09RF11
IC204	SI-3050CA
IC205	HA17431 or AN1431T

注	抵抗	Ω/W (指定なき1/4W.)
	コンデンサ	μF/V (p 指定pF)

6×			—		
5×			—		
4×			—		
3×			—		
2×			—		
1×			—		
HISTORY ×COUNT	SUFFIX RCPL	ECN-NO. DATE	REVISION		SIGN.

DRAWN BY	PLANNED BY	CHECKED BY	APPROVED BY	TENTATIVE	MODEL VSX-1761 PART NO. 0-479-456-01
	61		61.6.1		

UNIT mm
ANGLE 3rd
SCALE
TOLERANCE
USED ON
RANK
FAMILY
ORIGINAL MODEL VSX-1761
MATERIAL (COLOR)
FINISH (COLOR)
DESCRIPTION
(E)
(J) SR-425 回路図
PART NO. SB-D1594
1-413-756-11
SHEET 10

ISSUED . .
REVISED . .

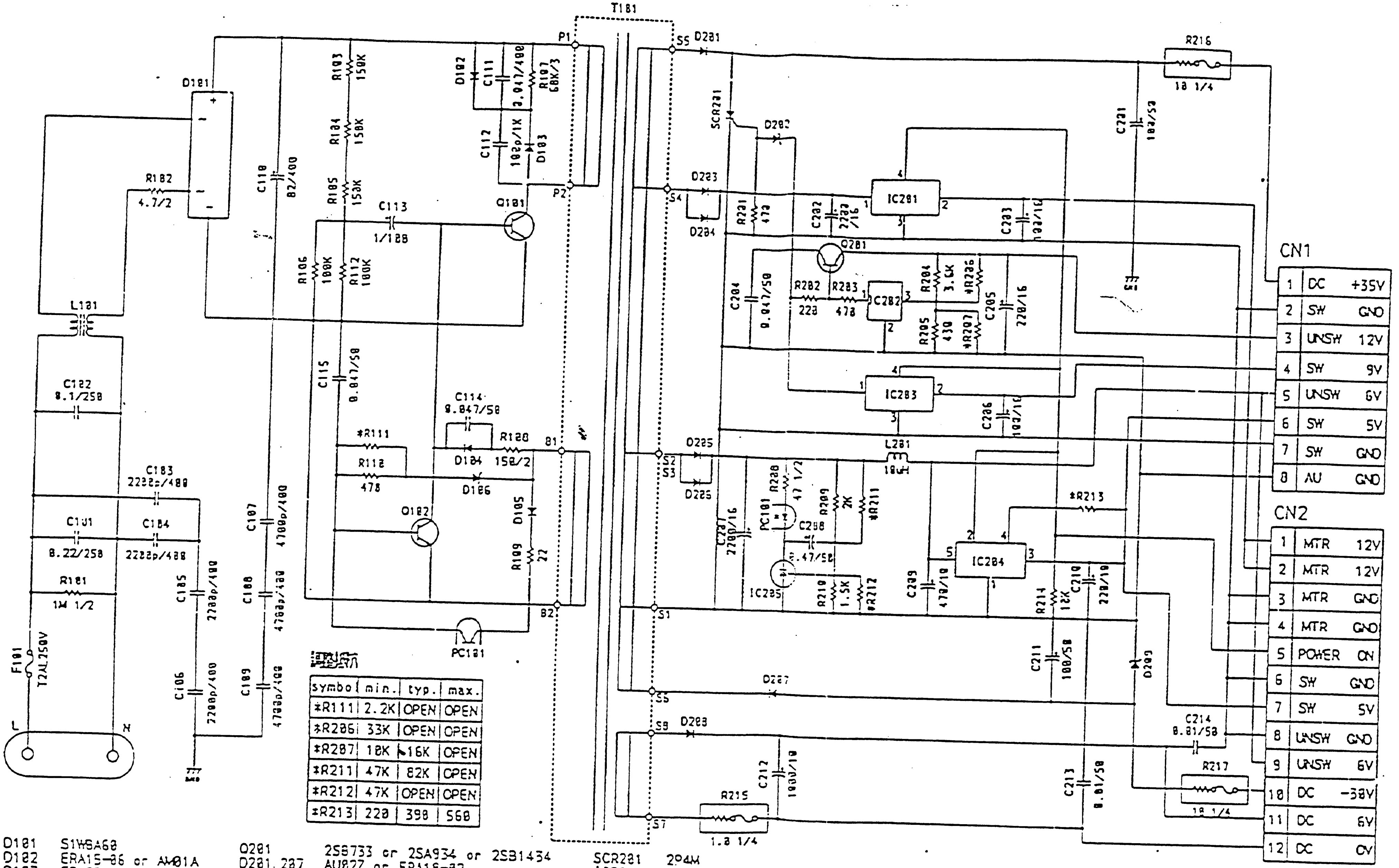
A3

SONY

SCALE FOR MICROFILM

DRAWING (TYPE D 30)

SONY STANDARD


T101
P1
P2
B1
B2
S1
S2
S3
S4
S5
S7
S8
D101
R102
4.7/2
L101
C102
0.1/250
C103
2200p/400
C101
0.22/250
C104
2200p/400
R101
1M 1/2
F101
T2AL250V
L
N
C105
2200p/400
C106
2200p/400
C110
82/400
C107
4700p/400
C108
4700p/400
C109
4700p/400
R103
150K
R104
150K
R105
150K
R106
100K
R112
100K
C113
1/100
C115
0.047/50
D102
C111
2.047/400
R107
68K/3
C112
100p/1K
D103
Q101
C114
0.047/50
*R111
R110
47Ω
R120
150/2
D104
D106
D105
R109
22
Q102
PC101
D201
SCR201
D202
D203
D204
R201
47Ω
C202
220/16
IC201
C203
100/10
Q201
C204
0.047/50
R202
220
R203
470
IC202
R204
3.6K
*R206
R205
470
*R207
C205
220/16
IC203
C206
100/10
D205
D206
L201
10µH
R208
47 1/2
PC101
R209
2K
*R211
C207
2200/16
C208
0.47/50
IC205
R210
1.5K
*R212
C209
470/10
IC204
*R213
R214
12K
C210
220/10
C211
100/50
D209
D207
D208
C212
1000/10
R215
1.0 1/4
C213
0.01/50
C214
0.01/50
R217
10 1/4
R216
10 1/4
C221
100/50
CN1
1 DC +35V
2 SW GND
3 UNSW 12V
4 SW 9V
5 UNSW 6V
6 SW 5V
7 SW GND
8 AU GND
CN2
1 MTR 12V
2 MTR 12V
3 MTR GND
4 MTR GND
5 POWER ON
6 SW GND
7 SW 5V
8 UNSW GND
9 UNSW 6V
10 DC -30V
11 DC 6V
12 DC 0V

symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	390	560

D101	S1WBA60
D102	ERA15-06 or AM01A
D103	ERA22-08 or EG01C
D104	ERA15-02 or 11ES2
D105	MA165
D106	RD3.0ES or MA4030
Q101	2SC4231
Q102	2SC3377
PC101	PS2551
Q201	2SB733 or 2SA934 or 2SB1434
D201, 207	AU02Z or ERA18-02
D202	RD16JSB or MA4160
D203, 204	S3L20U or ERC91-02 or RL4Z
D205, 206	D3S4M or RK44 or ERC81-004
D208	AK04 or ERA83-004
D209	RD39ES or MA4390
SCR201	2P4M
IC201	PQ12RF13
IC202	M5237L
IC203	PQ09RF11
IC204	SI-3052CA
IC205	HA17431 or AN1431T

記号	抵抗	Ω/W（指定なき1/4W）
	コンデンサ	µF/V（p 指定pF）

⚠5 ×			—		
⚠4 ×			—		
⚠3 ×			—		
⚠4 ×			—		
⚠2 ×			—		
⚠1 ×			—		
HISTORY ※COUNT	SUFFIX REPL		ECN-DATE	REVISION	SIGN.

DRAWN BY	PLANNED BY	CHECKED BY	APPROVED BY	TENTATIVE	MODEL VSX-1760 PART NO. 0-479-512-01

UNIT mm

ANGLE 3↔4

SCALE

TOLERANCE

USED ON

RANK

FAMILY

ORIGINAL MODEL VSX-1760

MATERIAL (COLOR)

FINISH (COLOR)

DESCRIPTION

(E)

(J) SR-426 回路図

PART NO. SB-D1914

1-413-757-11

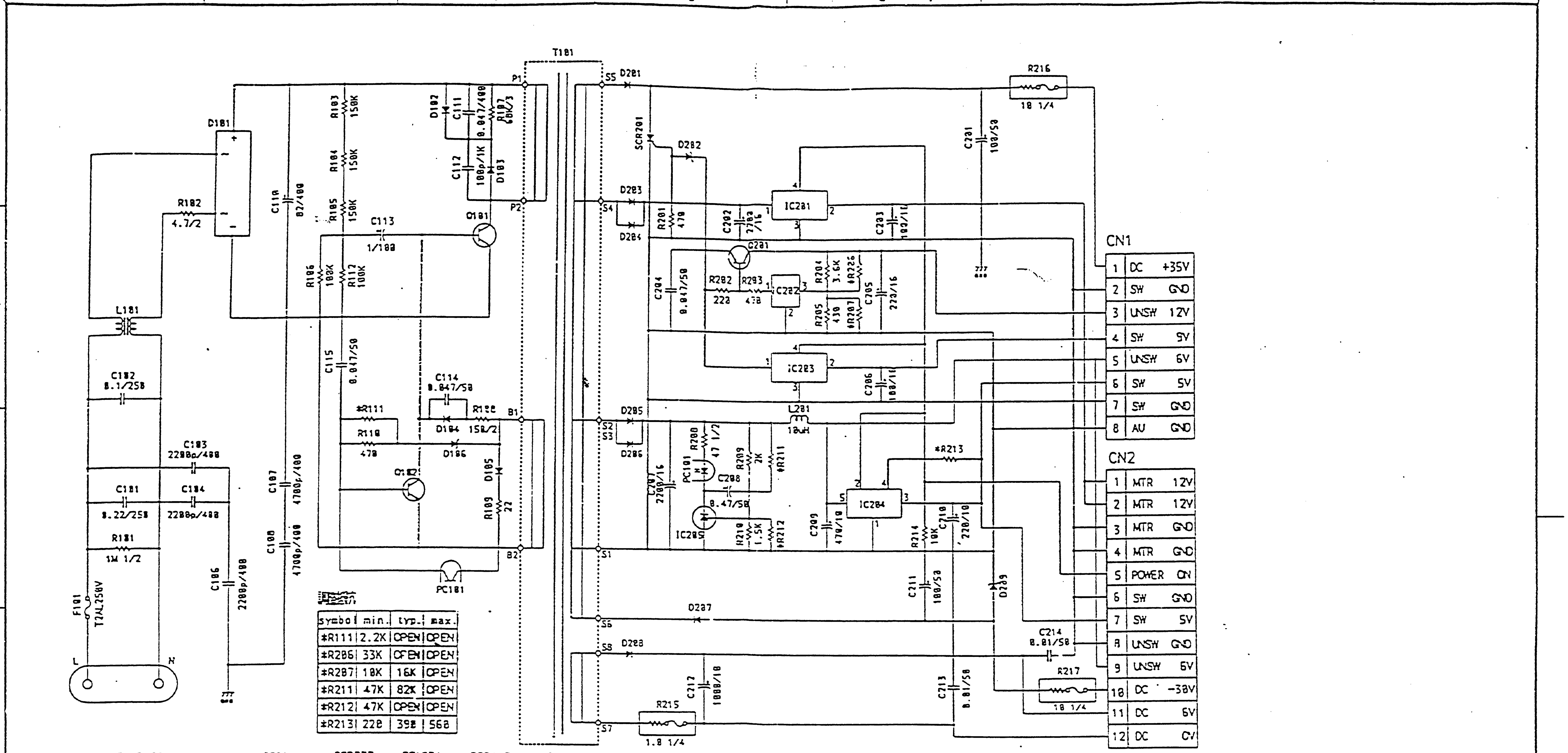
SHEET 10

ISSUED

REVISED

A3

SONY


A
B
C
D
E
F
G
H
SCALE FOR MICROFILM
DRAWING (TYPE D 30)
SONY STANDARD
T181
P1
P2
B1
B2
S1
S2
S3
S4
S5
S6
S7
D101
R102
4.7/2
L101
C102
0.1/250
C103
2200p/400
C101
0.22/250
C104
2200p/400
R101
1M 1/2
F101
T2AL250V
L
N
C106
2200p/400
C110
82/400
C107
4700p/400
C108
4700p/400
R103
150K
R104
150K
R105
150K
C113
1/100
R106
100K
R112
100K
Q101
D102
C111
0.047/400
R107
68K/3
C112
100p/1K
D103
C115
0.047/50
C114
0.047/50
R111
R110
470
R108
150/2
D104
D106
D105
R109
22
Q102
PC101
D201
SCR201
D202
D203
D204
R201
470
C202
220/16
IC201
C203
100/16
C201
100/50
R216
10 1/4
Q201
C204
0.047/50
R202
220
R203
470
IC202
R204
3.6K
R206
R205
430
R207
C205
220/16
IC203
C206
100/16
D205
D206
L201
10μH
C207
2200/16
R208
47 1/2
PC101
C208
0.47/50
R209
2K
R211
R213
IC204
IC205
R210
1.5K
R212
C209
470/10
R214
10K
C210
220/10
C211
100/50
D209
D207
D208
C212
1000/10
R215
1.8 1/4
C213
0.01/50
C214
0.01/50
R217
10 1/4
CN1
1 DC +35V
2 SW GND
3 UNSW 12V
4 SW 5V
5 UNSW 6V
6 SW 5V
7 SW GND
8 AU GND
CN2
1 MTR 12V
2 MTR 12V
3 MTR GND
4 MTR GND
5 POWER ON
6 SW GND
7 SW 5V
8 UNSW GND
9 UNSW 6V
10 DC -30V
11 DC 6V
12 DC 0V

[illegible]

symbol	min.	typ.	max.
*R111	2.2K	OPEN	OPEN
*R206	33K	OPEN	OPEN
*R207	10K	16K	OPEN
*R211	47K	82K	OPEN
*R212	47K	OPEN	OPEN
*R213	220	390	560

D101	S1WBA60
D102	ERA15-05 or AM01A
D103	ERA22-08 or EG01C
D104	ERA15-02 or 11ES2
D105	MA165
D106	RD3.0ES or MA4030
Q101	2SC4231
Q102	2SC3377
PC101	CN3171
Q201	2SB733 or 2SA934 or 2SB1434
D201, 207	AU02Z or ERA15-02
D202	RD15JSB or MA4150
D203, 204	S3L20U or ERC91-02 or RL4Z
D205, 206	D3S4M or RK44 or ERC81-004
D208	AK04 or ERA83-004
D209	RD39ES or MA4390
SCR201	2P4M
IC201	PQ12RF13
IC202	M5237L
IC203	PQ09RF11
IC204	SI-3052CA
IC205	HA17431 or AN1431T

単位	抵抗	Ω/W （指定なき物 1/4W ）
	コンデンサ	μF/V （ p 表示は pF ）

HISTORY COUNT	SUFFIX	E.C.N. NO.	REVISION	SIGN.
△×		—		
△×		—		
△×		—		
△×		—		
△×		—		
△×		—		

UNIT	mm
ANGLE	3rd
SCALE	
TOLERANCE	
USED ON	
RANK	
FAMILY	
ORIGINAL MODEL	VSX-1762
MATERIAL (COLOR)	
FINISH (COLOR)	
DESCRIPTION	SR-427 回路図
DRAWN BY	
PLANNED BY	
CHECKED BY	
APPROVED BY	
TENTATIVE MODEL	VSX-1762
PART NO	0-479-513-01
PART NO.	SB-D1595 1-413-758-11
SHEET	10

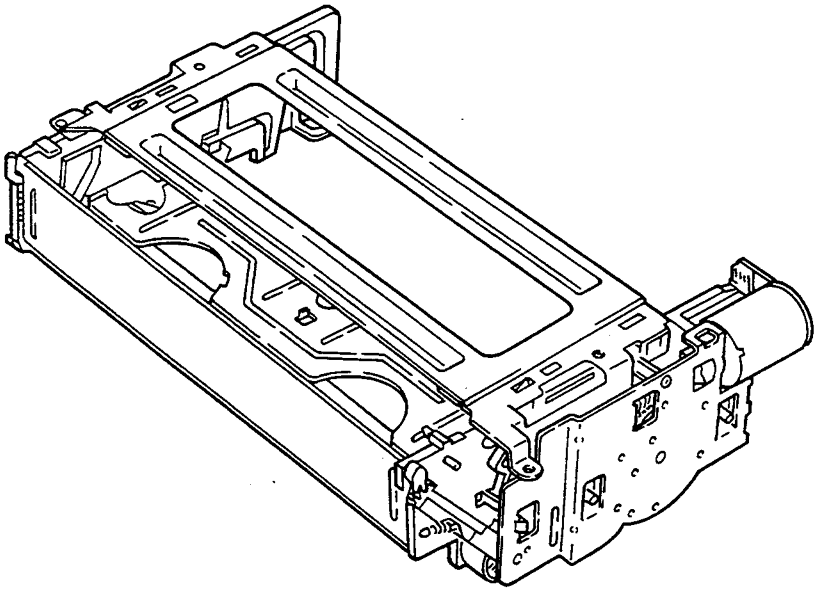
ISSUED ______ REVISED ______

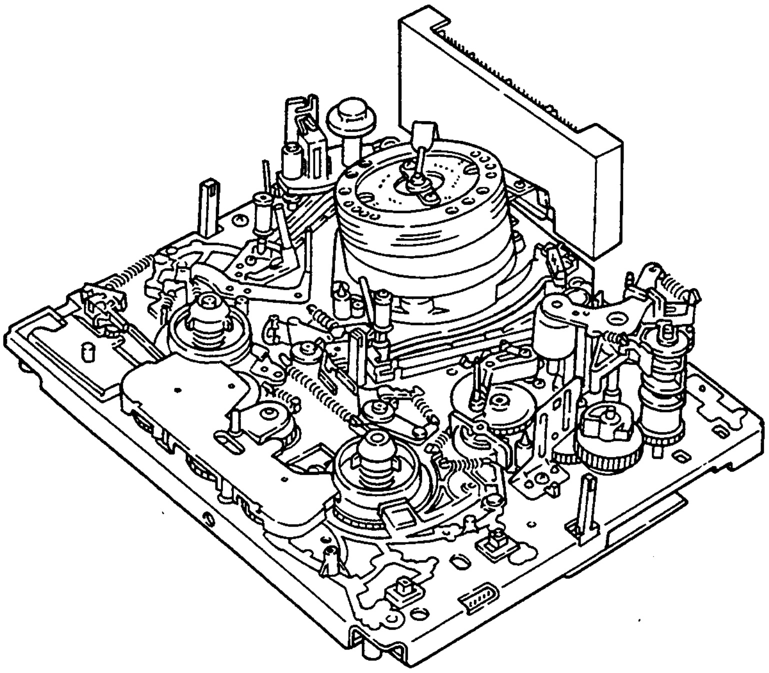
REF NO.	P/N	REMARKS
F 181	1-532-203-00	2A 250V
C 101	1-130-711-00	0.22 μF/250V
C 102	1-130-710-00	0.1 μF/250V
C 103	1-161-742-00	CERAMIC 2200PF/400V
C 104	1-161-742-00	〃
C 105	〃	〃
C 106	〃	〃
C 107	1-162-599-12	CERAMIC 4700PF/400V
C 108	〃	〃
C 109	〃	〃
C 110	1-125-497-11	100 μF/400V (ORIGINAL 82 μF/400V)
C 111	1-136-207-11	0.047 μF/600V (〃 400V)
C 112	1-162-558-11	100PF/2KV
C 113	1-126-772-11	1 μF/100V
C 114	1-137-420-11	MAILAR 0.047 μF/100V
C 115	〃	〃
C 201	1-124-122-11	100 μF/50V (85 DEG TYPE)
C 202	1-128-320-11	2200 μF/16V (105 DEG TYPE)
C 203	1-126-933-11	100 μF/16V (85 DEG TYPE)
C 204	1-137-420-11	MAILAR 0.047 μF/100V
C 205	1-126-934-11	220 μF/16V
C 206	1-126-933-11	100 μF/16V
C 207	1-128-320-11	2200 μF/16V (105 DEG TYPE)
C 208	1-124-902-11	0.47 μF/50V
C 209	1-126-947-11	470 μF/16V (85 DEG TYPE)
C 210	1-126-934-11	220 μF/16V (〃)
C 211	1-124-122-11	100 μF/50V (〃)
C 212	1-124-557-11	1000 μF/25V (〃)
C 213	1-137-370-11	MAILAR 0.01 μF/50V
C 214	〃	〃
R 101	1-214-937-00	1M 1/2W
R 102	1-216-377-11	4.7Ω/2W (ORIGINAL 4.7Ω/2W CEMENT)
R 103	1-247-883-00	150K 1/4W
R 104	〃	〃
R 105	〃	〃
R 106	1-249-441-11	100K 1/4W
R 107	1-215-928-11	68K/3W
R 108	1-215-887-11	150Ω/2W
R 109	1-249-397-11	22 Ω 1/4W
R 110	1-249-413-11	470 1/4W
R 111	FOR ADJUSTMENT	
R 112	1-249-441-11	100K 1/4W
R 201	1-249-413-11	470 1/4W
R 202	1-249-409-11	220 1/4W
R 203	1-249-413-11	470 1/4W
R 204	1-247-844-11	3.6K 1/4W
R 205	1-247-822-11	430 1/4W
R 206	FOR ADJUSTMENT	
R 207	〃	
R 208	1-260-348-11	47 1/2W
R 209	1-247-838-00	2K

R 210	1-215-425-00	1.5K	
R 211	FOR ADJUSTMENT		
R 212	〃		
R 213	〃		
R 214	1-249-429-11	10K 1/4W	
R 215	1-219-149-11	FUSE RESISTOR	1 Ω 1/4W
R 216	1-219-112-11	〃	10 Ω 1/4W
R 217	〃	〃	
D 101	8-719-510-06	S1WA60	
D 102	8-719-304-63	RM11C	(ORIGINAL ERA15-06)
D 103	8-719-948-45	ERA22-08	
D 104	8-719-200-02	10E-2	
D 105	8-719-912-20	ISS120	(ORIGINAL MA165)
D 106	8-719-109-63	RD3, 0ES-B2	
Q 101	8-729-204-94	2SC3559	(ORIGINAL 2SC4231)
Q 102	8-729-265-52	2SC2655	(〃 2SC3377)
PC 101	9-903-923-01	ON3171	
Q 201	8-729-140-93	2SB733-34	
D 201	8-719-313-16	AU02A	(ORIGINAL ERA18-02)
D 202	8-719-114-82	RD16JSB1	
D 203	8-719-920-67	ERC91-02	
D 204	〃	〃	
D 205	8-719-981-00	ERC81-004	
D 206	〃	〃	
D 207	8-719-313-16	AU02A	
D 208	8-719-980-78	ERA83-006	(ORIGINAL ERA83-004)
D 209	8-719-110-88	RD39ES-B	(〃 MA4390)
SCR 201	8-719-104-17	2P5M	(ORIGINAL 2P4M 500V →600V)
IC 201	NOTHING	PQ12RF13	(PQ12RF11 9-902-066-01)
IC 202	8-759-632-07	M5237L	
IC 203	9-902-066-01	PQ12RF11	
IC 204	8-749-920-43	SI3050CA	(SI-3050CA)
IC 205	8-759-420-19	AN1431T	(ORIGANAL HA17431P)
L 181	1-421-915-11	CHALK COIL	
L 201	9-998-937-01	〃 10μF	
AC INLET	1-540-054-11	AC INLET	
T 101	NO SUBSTITUTION (SWITCHING TRANSE)		

VHS MECHANICAL ADJUSTMENT MANUAL II

- Please use in conjunction with the SERVICE MANUAL.
- This VHS MECHANICAL ADJUSTMENT MANUAL II can be used for NTSC system and PAL system.





VHS VIDEO RECORDER

SONY®

MICROFILM

MC-Service

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1. PREPARATIONS FOR CHECKS, ADJUSTMENTS AND REPLACEMENT OF THE DECK MECHANISM

Note : Refer to "Replacement Method" in the Service Guide for instructions on replacing the cabinet and PC boards. DO not perform cassette loading or threading with the VCR positioned upside-down.

1-1. LOADING AND UNLOADING VIDEO CASSETTES WITH THE POWER OFF. (Fig. 1-1.)

1-1-1. Manual loading and unloading

1) Rotate the loading motor in the direction of arrow Ⓐ until loading is compleated.
(When unloading, rotate the loading motor in the direction of arrowⒷ.)

1-1-2. Loading and unloading using a separate power source.

1) Cassette loading is performed by applying approx. 10V (300 mA) to the power terminal of the loading motor using a stabilized DC power source.
(When unloading, apply the same voltage to the opposite polarity of the power terminal.)

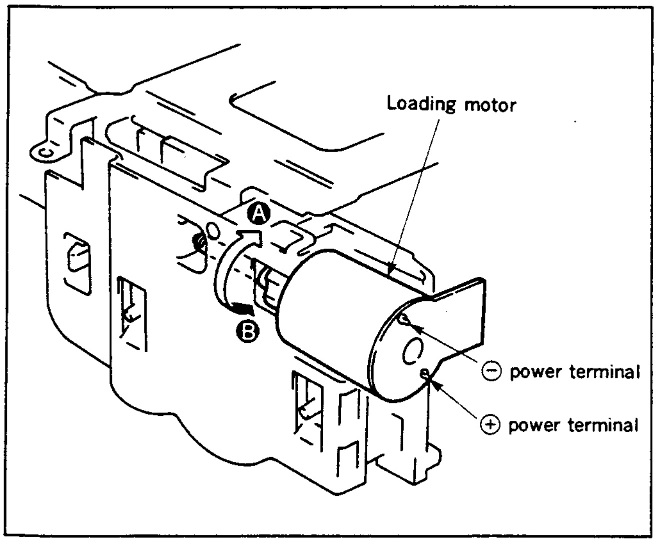


Fig. 1-1.

1-2. THREADING AND UNTHREADING WITH THE POWER OFF. (Fig. 1-2)

1-2-1. Manual threading and unthreading

1) Rotate the cam motor ❶ in the direction of arrowⒶuntil threading is completed.
(When unthreading, rotate the cam motor ❶ in the direction of arrowⒷ.)

1-2-2. Threading and unthreading using a separate power source.

1) Threading is performed by applying approx. 10V (500 mA) to the power terminal for the cam motor ❶ using a DC stabilized power source.
(When unthreading, apply the same voltage to the opposite polarity of the power terminal.)

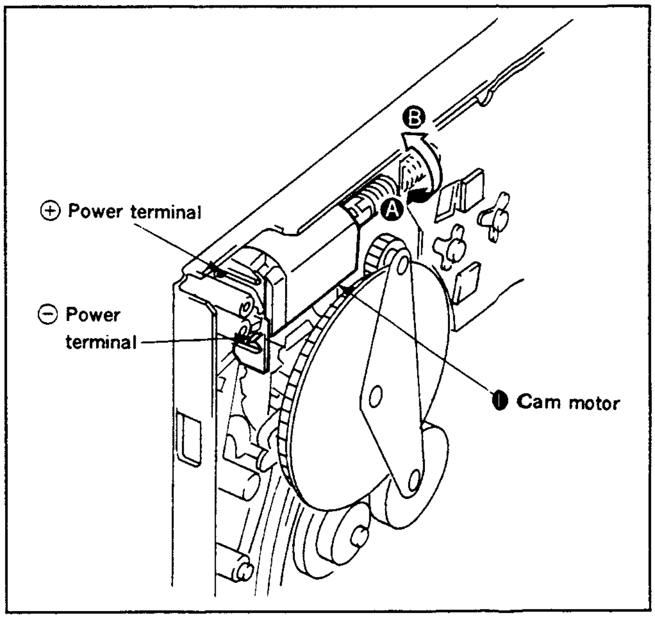


Fig. 1-2.

1-3. TO COMPLETE THREADING WITH THE FL CASSETTE CONTROLLER REMOVED. (Fig. 1-3)

1) Unplug the AC power cord from the power outlet.
2) Shield the supply, take-up sensors and the LED with black-masking tape.
3) Hold the cassatte down switch depressed by taping it, etc.
4) Plug the AC power cord into a power outlet.
   (At this time, the power should turn on and the tape rewinds for approx. 10 seconds, and the power turns off.)
5) Turn the power switch ON so that the mechanism is ready for loading.

Note : In this condition, the VTR is ready to operate in the different operating modes, including the record mode. At this time, rewind the tape for at least 15 seconds, then perform fast forward (FF).

Note : Following the above, be sure to reset the mechanism to the previous state as outlined below.

1) Remove the black-masking tape shielding the supply and take-up sensors, the LED and the tape holding cassette down switch.
2) Unplug the AC power cord from the power outlet to reset the system control microprocessor.

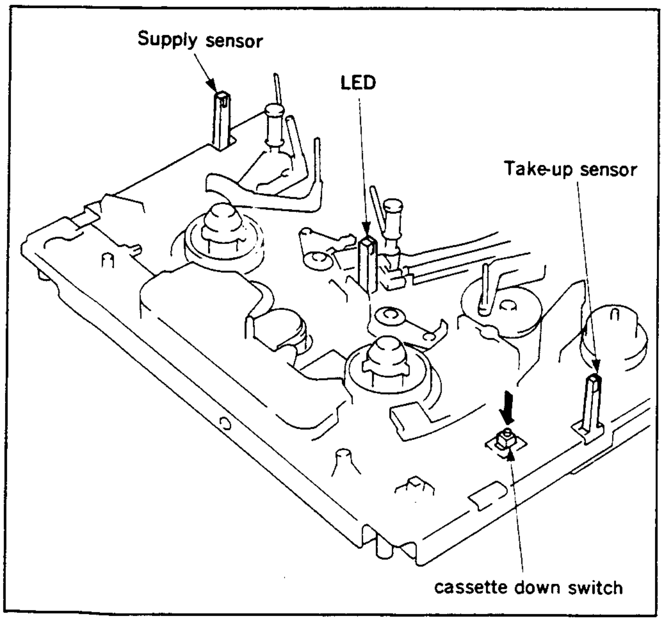


Fig. 1-3.

MC-Service

2. PERIODICAL INSPECTION AND REPLACEMENT

We recommend performing the following periodical inspections and maintenance in order to ensure that the unit operates in top condition and offers full performance, as well as realizes a long life of the mechanism and tapes.

* Be sure to perform the following maintenance procedures after the unit is repaired (regardless how long the unit has been used.)

2-1. CLEANING THE ROTARY HEAD DISC ASS'Y

1) Press Attach a deer skin cloth (Jig. Ref. No. J-7) soaked in cleaning solution (Jig. Ref. No. J-5) lightly to the rotary drum ass'y, then turn the rotary head disc slowly by hand to clean the surface of the rotary drum ass'y. (At this time, do not turn on the power motor to rotate the rotary head disc for cleaning.)
2) Also, do not wipe the drum ass'y by moving the deer skin cloth vertically across the head as this could damage of the tip of the head.

2-2. CLEANING THE TAPE TRANSPORT SYSTEM

1) Clean the tape transport surfaces (tape guide, a drum ass'y surfaces, capstan, pinch roller, etc.) with a deer skin cloth soaked in an approved in the recommended cleaning solution.

2-3. CLEANING THE DRIVE SYSTEM

1) Wipe the drive mechanism with an ordinary cloth soaked in an approved cleaning solution.

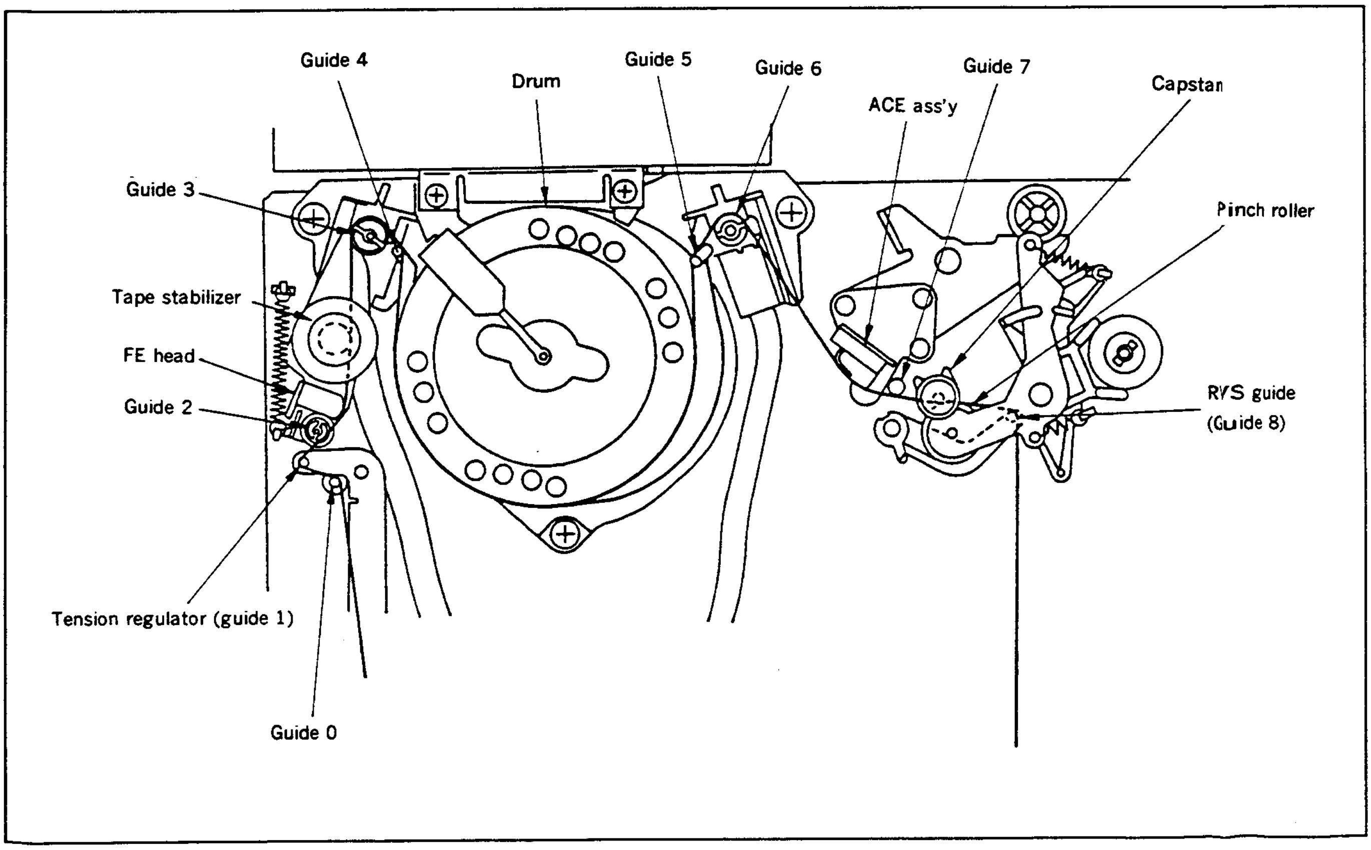

Guide 4
Drum
Guide 5
Guide 6
Guide 7
ACE ass'y
Capstan
Guide 3
Pinch roller
Tape stabilizer
FE head
Guide 2
R/S guide
(Guide 8)
Tension regulator (guide 1)
Guide 0

Fig. 2-1.

2-4. PERIODIC MAINTENANCE

Location of Maintenance and Check		User Hours	500	1,000	1,500	2,000	2,500	3,000	3,500	4,000	4,500	5,000	Remarks
		Replacement Part No.											
Perfor mance Check	Clean tape running surfaces	——	○	○	○	○	○	○	○	○	○	○	Always perform after repair.
	Clean, degauss ACE ass'y	——	○	○	○	○	○	○	○	○	○	○	
	Clean, degauss video disc ass'y	——	○	○	○	○	○	○	○	○	○	○	Head life is greatly affected by environment and method of use.
Driving System	Reel belt	3-736-013-01	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
Tape Running System	Abnormal noise	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Adjust or replace source of abnormal noise.
	Back tension measurement	——	–	☆	–	☆	–	☆	–	☆	–	☆	Check according to 4-1-1. Spec : 24 — 34g/cm (Measured with torque cassette)
	Brake system check	——	–	☆	–	☆	–	☆	–	☆	–	☆	
	REC/PB function check	——	☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Always perform after repair.
	Forward torque measurement		☆	☆	☆	☆	☆	☆	☆	☆	☆	☆	Spec : 80 — 140 g•cm

○ Cleaning ☆ Check

Note : Refer to the above items for part replacement when performing an overhaul.

2-5. SERVICE TOOLS AND JIGS

Ref. No.	Description	Part No.	Printing on jig	Remarks
J-1	Master plane	H-7099-279-H		
J-2	Reel disc height jig	H-7099-038-H		
J-3	Torque gauge adapter	H-7099-035-H		
J-4	Torque gauge	H-7099-039-H		
J-5	0.93mm Allen wrench	H-7099-202-H		
J-6	NTSC torque cassette VHT-063S PAL torque cassette	J-6082-011-A J-6082-066-A		For rewind torque and back tension
	NTSC torque cassette VHT-404S PAL torque cassette	J-6082-012-A J-6082-067-A		For cue/review
J-7	NTSC alignment tape JVC-MH-1 PAL alignment tape JVC-MH-2	H-7099-046-H H-7099-052-H		
	NTSC Hi-Fi alignment tape PAL Hi-Fi alignment tape	H-7099-153-H H-7099-175-H		
J-8	Cleaning fluid	Y-2031-001-0	———	
J-9	Chamois cloth	2-034-697-00	———	Cleaning
J-10	Head degausser	Widely available	———	Video, audio head degaussing
J-11	Small adjustment mirror (with handle) Small adjustment mirror (mirror only)	J-6080-029-A J-6080-030-1	SL-5052	For tape path and tape running adjustment and check

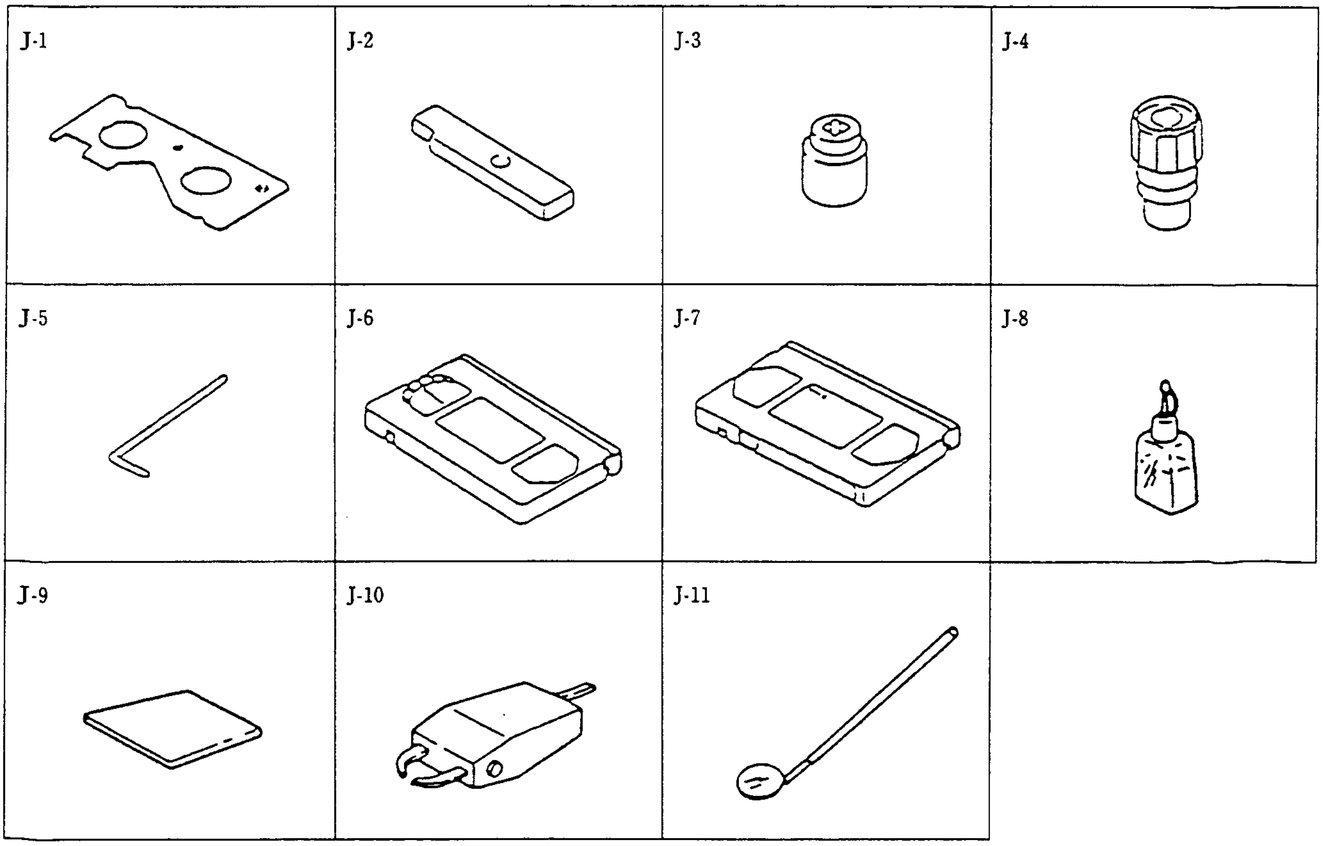


Fig. 2-2. Service tools and jigs

3. REPLACEMENT OF MAJOR COMPONENT PARTS OF THE DECK MECHANISM

Note:
- ○ Refer to "Replacement Method" in the Service Guide for replacing the cabinet and PC boards.
- ○ When mounting parts, reverse the replacement procedure while referring to "Precautions on Mounting Parts".
- ○ After grease coated parts such as gears are replaced, re-grease the replaced part.
- ○ Do not touch the guides (taped surface) and brake shoe directly with your fingers or grease them, etc.
- ○ Gears must be mounted so that they mesh with each other.

3-1. FL MECHANISM

3-1-1. FL door (Fig. 3-1.)

1) Press the claw ❶ in the direction of arrow Ⓐ, then remove the FL door ❷ in the direction of arrow Ⓑ.

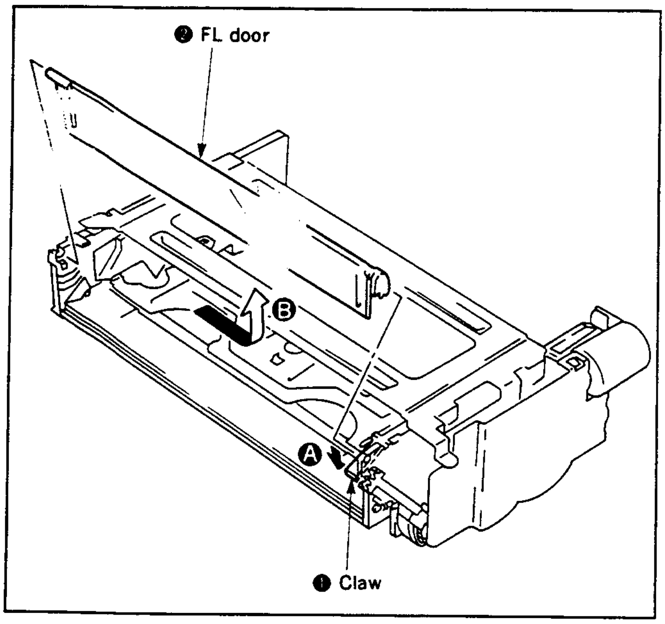

❷ FL door
Ⓑ
Ⓐ
❶ Claw

Fig. 3-1.

3-1-2. Erasure protection lever (Fig. 3-2)

1) Remove the spring ❶.
2) Disengage the claw ❷, then slide the erasure protection lever ❸ in the direction of arrow Ⓐ.
3) Disengage the erasure protection lever ❸ in the direction of arrow Ⓑ.

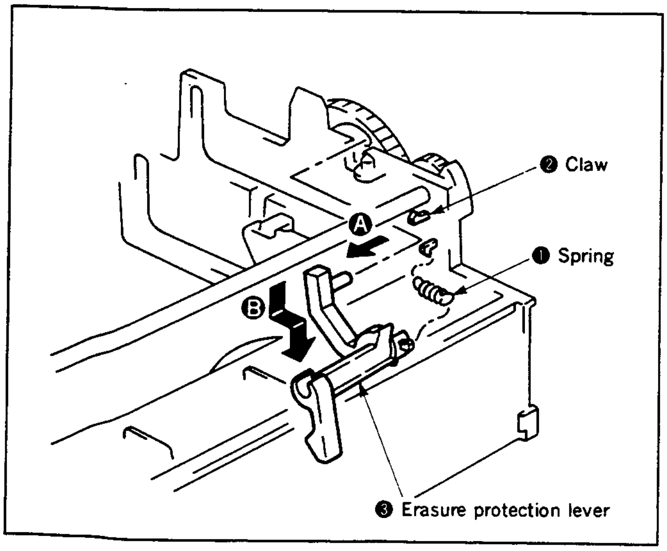

❷ Claw
Ⓐ
❶ Spring
Ⓑ
❸ Erasure protection lever

Fig. 3-2.

3-1-3. Gear cover ass'y (Fig. 3-3)

1) Disengage the four claws ❶, then remove the gear cover ass'y ❷.

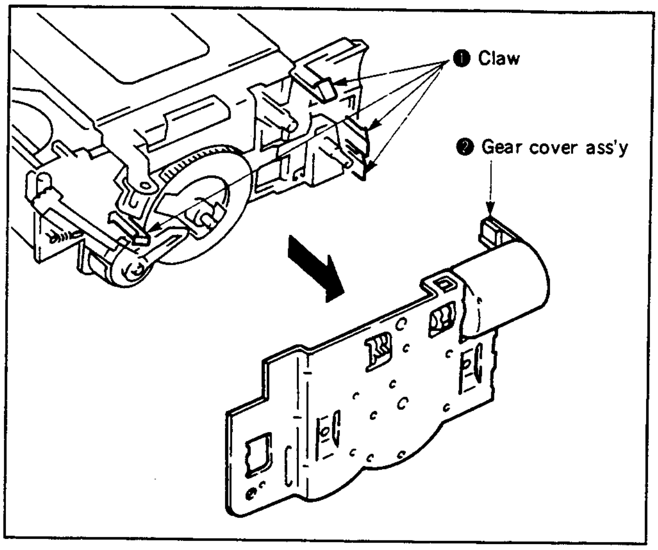

❶ Claw
❷ Gear cover ass'y

Fig. 3-3.

3-1-4. Loading motor, worm gear (FL), worm wheel (FL), worm bearing (Fig. 3-4)

1) Remove washer 3 ❶, then pull out the worm wheel (FL) ❷.
2) Remove the two screws ❸, then remove the loading motor ❹.
3) Remove the worm gear (FL) ❺ and worm bearing ❻.

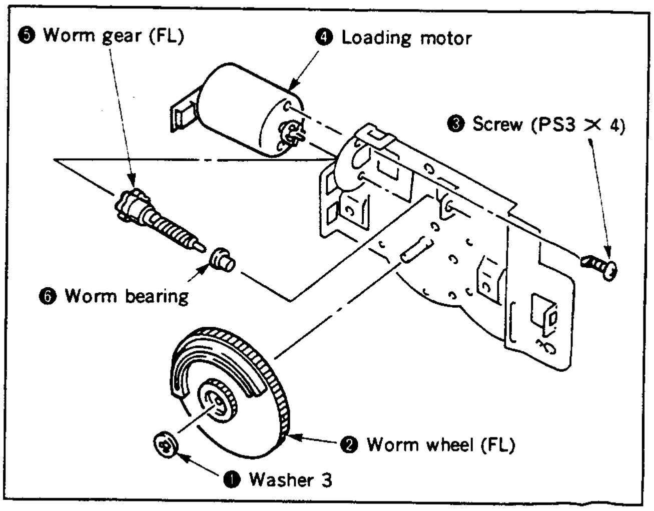

❺ Worm gear (FL)
❹ Loading motor
❸ Screw (PS3 × 4)
❻ Worm bearing
❷ Worm wheel (FL)
❶ Washer 3

Fig. 3-4.

3-1-5. Door OPEN/CLOSE arm (Fig. 3-5)

1) Remove the spring ❶.
2) Pull out the door OPEN/CLOSE arm ❷.

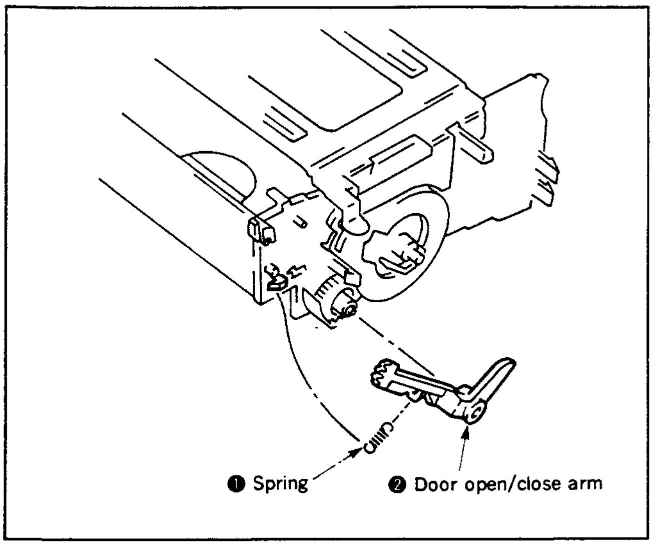

❶ Spring
❷ Door open/close arm

Fig. 3-5.

[Precautions on remounting] (Figs. 3-6 and 3-7.)

- ○ When mounting the gear cover ass'y, match up the two holes on the gear cover ass'y with the two holes on the worm wheel (FL) and then with the hole on the right drive arm ass'y.
- ○ Mesh the FL door and the door OPEN/CLOSE arm together as shown in Ⓐ section in the figure below.
- ○ The erasure protection lever shaft must fit into the groove on the left drive arm ass'y.

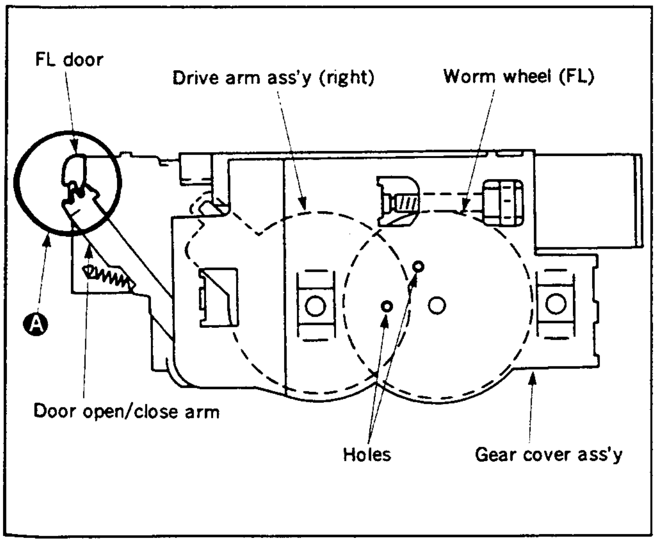

FL door
Drive arm ass'y (right)
Worm wheel (FL)
Ⓐ
Door open/close arm
Holes
Gear cover ass'y

Fig. 3-6.

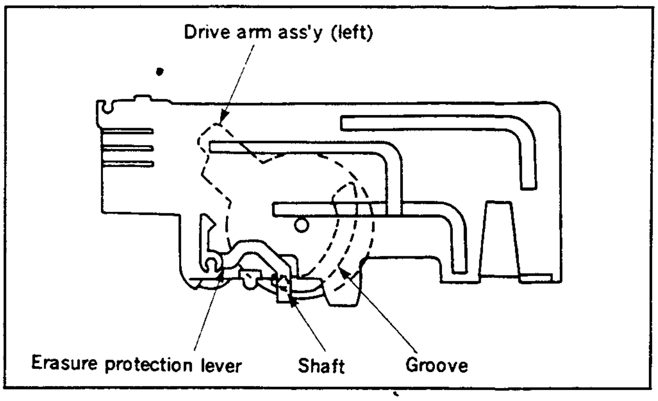

Drive arm ass'y (left)
Erasure protection lever
Shaft
Groove

Fig. 3-7.

3-2. TS ASS'Y AND GUIDE ROLLER ASS'Y No. 2 (Fig. 3-8)

1) Remove the spring ❶.
2) Remove the TS ass'y ❷ in the direction of arrow Ⓐ.
3) Turn guide roller ass'y No. 2 ❸ in the direction of arrow Ⓑ and pull it out.

[Precautions on remounting]

- ○ Clean the surface of guide roller No. 2 ❸ where the tape is attached.
- ○ Apply lubricant over the section shown in Figure A below.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

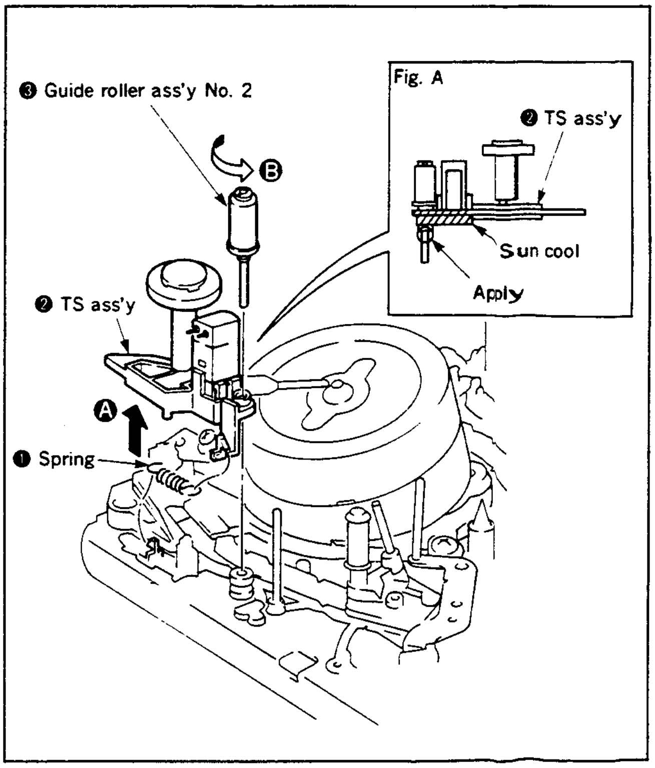

❸ Guide roller ass'y No. 2
Ⓑ
❷ TS ass'y
Ⓐ
❶ Spring
Fig. A
❷ TS ass'y
Sun cool
Apply

Fig. 3-8.

3-3. ACE ASS'Y (Fig. 3-9)

1) Slide the torsion coil spring ❶ in the direction of the arrow.
2) Remove the nylon nut N3 ❷, then pull out the ACE ass'y ❸.
3) Remove the ACE adjuster screw ❹.

[Precautions on remounting]

○ Clean the surface of the ACE ass'y ❸ where the tape is attached.

○ Hook both ends of the torsion coil spring ❶ to the ass'y as shown in Figure A below.

○ Adjust the ACE adjuster screw ❹ to the height shown in Figure A.

[Adjustment after replacement]

○ Perform tape path adjustments as described in 4-1.

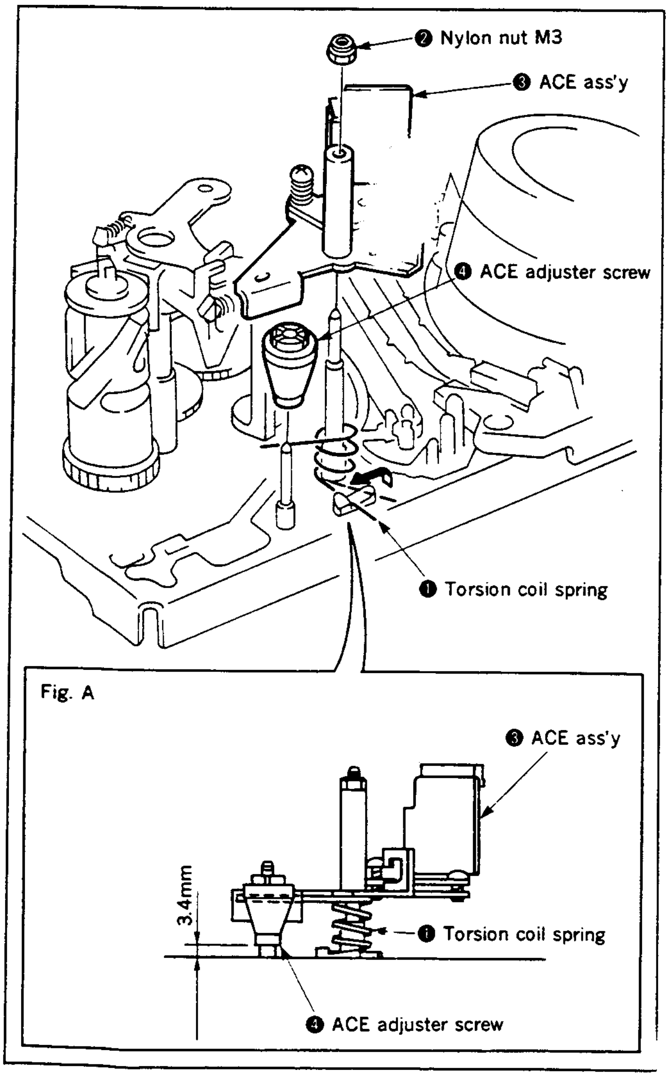

❷ Nylon nut M3
❸ ACE ass'y
❹ ACE adjuster screw
❶ Torsion coil spring
Fig. A
❸ ACE ass'y
3.4mm
❶ Torsion coil spring
❹ ACE adjuster screw

Fig. 3-9.

3-4. DRUM ASS'Y (Fig. 3-10)

1) Remove the three screws ❶, then remove the drum ass'y ❷.

[Precautions on remounting]

○ Do not touch the head tips ❸ and the ground plate ❹ directly with your fingers or tools.

○ Clean the surface of the drum ass'y ❷ where a tape is attached.

○ The stopper ❺ must be attached at the point shown in the figure below.

○ Screws must be fastened with a 6kg•cm (±1kg•cm) screw fastening torque. (The screws can be mounted in any order.)

[Adjustment after replacement]

○ Perform tape path adjustments as described in 4-1.

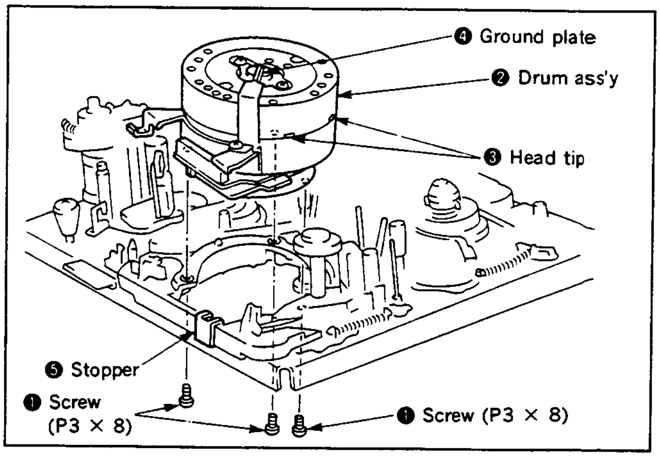

❹ Ground plate
❷ Drum ass'y
❸ Head tip
❺ Stopper
❶ Screw (P3 × 8)
❶ Screw (P3 × 8)

Fig. 3-10.

3-5. DRUM BASE ASS'Y (Fig. 3-11)

1) Remove the drum. (Refer to 3-4.)
2) Remove the three screws ❶, then remove the drum base ass'y ❷.

[Precautions on remounting]

○ The spacer ❸ for the drum base must be mounted in its previous position as shown in the figure below. [Note that some units do not feature the spacer ❸.]

○ Fastening torque must be 10kg•cm (±1kg•cm)

○ The screws must be mounted in order of (a),(b) and (c).

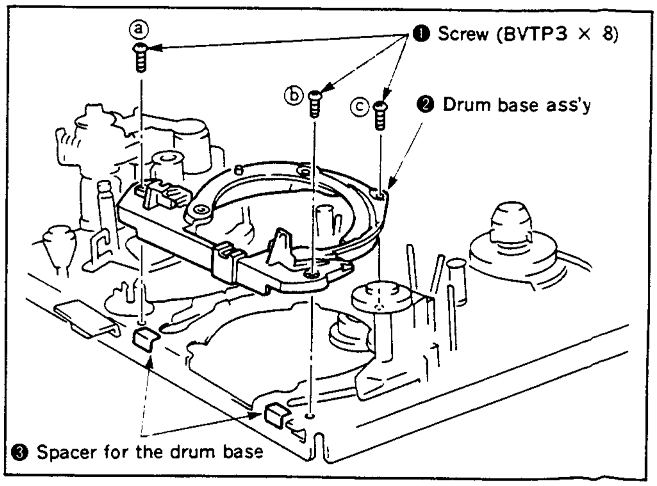

ⓐ
❶ Screw (BVTP3 × 8)
ⓑ
ⓒ
❷ Drum base ass'y
❸ Spacer for the drum base

Fig. 3-11.

3-6. PINCH ROLLER ASS'Y AND ELEVATOR CAM (Fig. 3-12)

1) Remove the two claws ❶, then pull out the stopper ❷.
2) Pull out the pinch roller ass'y ❸.
3) Pull out the elevator cam ❹.

[Precautions on remounting]

○ Clean the surface of the pinch roller ass'y ❸ where the tape is attached.

○ Match up the ▯ marks on the elevator cam ❹ and cam gear, press ❺.

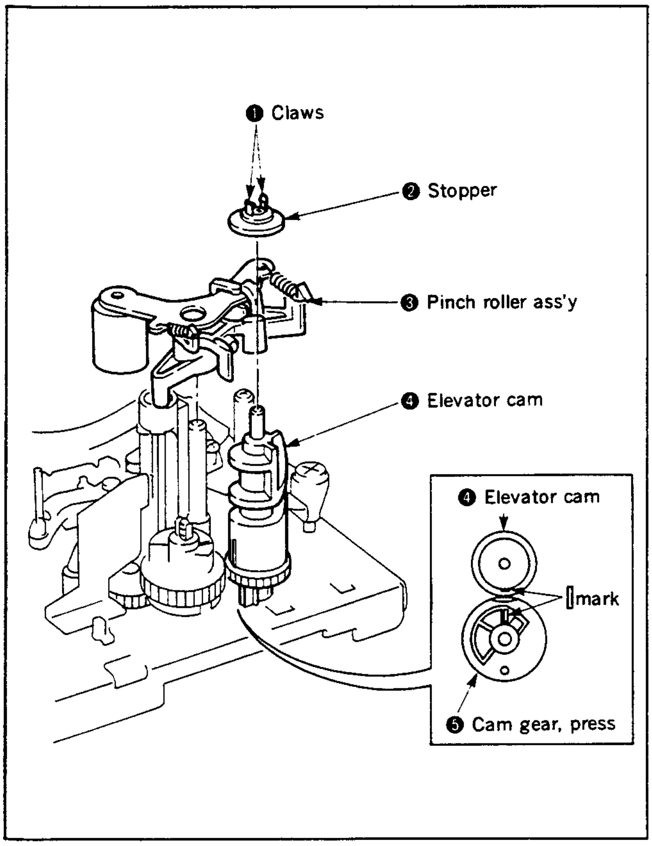

❶ Claws
❷ Stopper
❸ Pinch roller ass'y
❹ Elevator cam
❹ Elevator cam
▯mark
❺ Cam gear, press

Fig. 3-12.

3-7. CAM GEAR, PRESS AND TRANSMISSION GEAR (Fig. 3-13)

1) Remove the pinch roller ass'y. (Refer to 3-6.)
2) Remove the screw ❶, then remove the lid release plate ❷.
3) Remove the two claws ❸, then pull out the cam gear, press ❹.
4) Remove the washer 2 ❺, then pull out the transmission gear ❻.

[Precautions on remounting]

○ Check the top and bottom of the transmission gear ❻.

○ Match up the hole ❼ on the chassis with the hole ❼ on the cam gear, press ❹.

○ Match up the ▯ mark on the cam gear, press ❹ with the ▯ mark on the alleviator cam ❽.

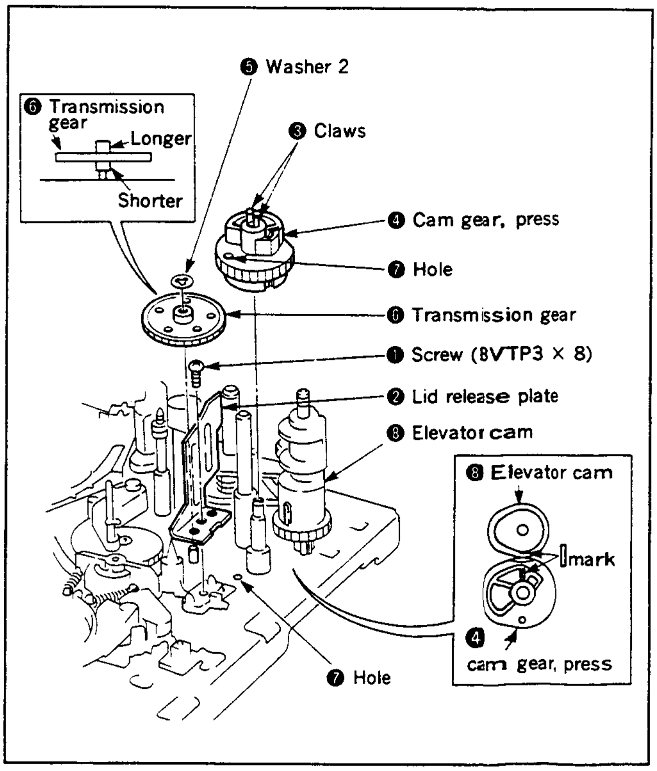

❺ Washer 2
❻ Transmission gear
Longer
Shorter
❸ Claws
❹ Cam gear, press
❼ Hole
❻ Transmission gear
❶ Screw (8VTP3 × 8)
❷ Lid release plate
❽ Elevator cam
❽ Elevator cam
▯mark
❹ cam gear, press
❼ Hole

Fig. 3-13.

3-8. RVS ARM ASS'Y AND RVS CAM GEAR (Fig. 3-14)

1) Remove the nylon nut M2 ❶ and plastic washer ❷.
2) Disengage the claw ❸, then pull out the RVS arm ass'y ❹.
3) Remove washer 2 ❺, then pull out the RVS cam gear ❻.

[Precautions on remounting]

- ○ The holes ❼ in the chassis and in the RVS cam gear ❻ must match up. Also, make sure to match up the holes ❾ on the cam gear, press ❽ and the chassis.
- ○ The spring ❿ must be hooked as shown in Fig. A below.
- ○ Clean the surface of the RVS arm ass'y ❹ where a tape is attached.
- ○ Apply 1/2 drop of lubricant to the shaft ⓫.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

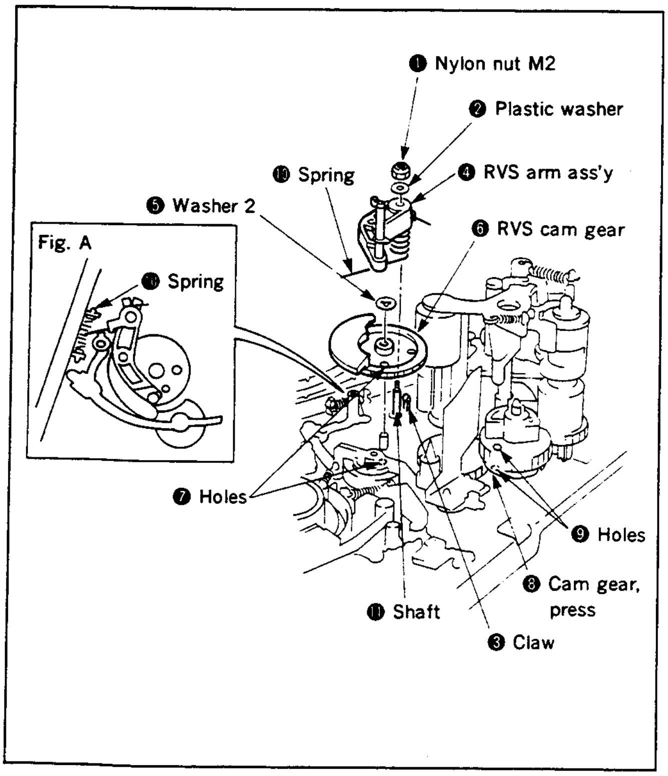

❶ Nylon nut M2
❷ Plastic washer
❿ Spring
❹ RVS arm ass'y
❺ Washer 2
❻ RVS cam gear
Fig. A
❿ Spring
❼ Holes
❾ Holes
❽ Cam gear, press
⓫ Shaft
❸ Claw

Fig. 3-14.

3-9. GUIDE No. 7 (Fig. 3-15)

1) Remove the nylon nut M3 ❶.
2) Pull out guide flange No. 7 ❷, guide sleeve No. 7 ❸, guide flange No. 7 ❹ and compression coil spring ❺ in the given order.

[Precautions on remounting]

- ○ Clean the surface of the guide sleeve No. 7 ❸ where the tape is attached.
- ○ Adjust the height of guide No. 7 to the height shown in Fig. A below.

[Adjustment after replacement]

- ○ Perform tape path adjustments as described in 4-1.

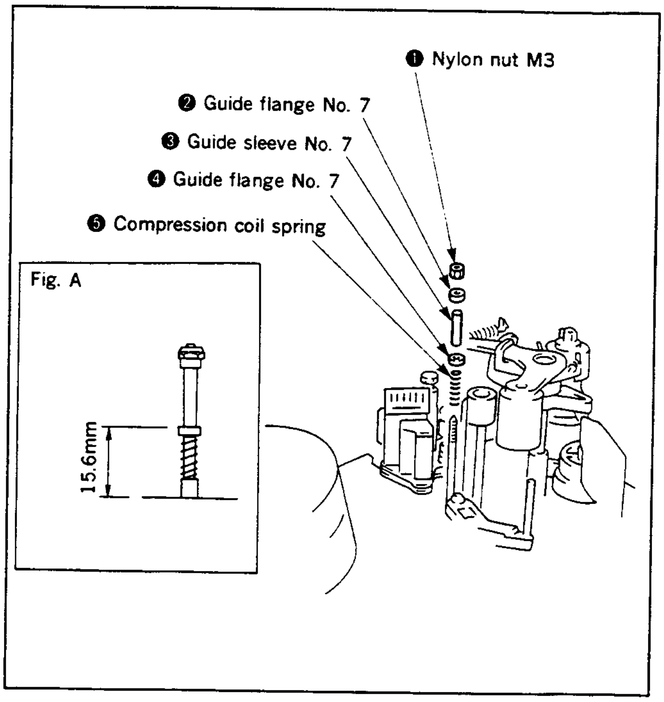

❶ Nylon nut M3
❷ Guide flange No. 7
❸ Guide sleeve No. 7
❹ Guide flange No. 7
❺ Compression coil spring
Fig. A
15.6mm

Fig. 3-15.

3-10. S-BRAKE ASS'Y, T-BRAKE ASS'Y (Fig. 3-16)

1) Remove the spring ❶.
2) Disengage the claw ❷, then pull out the S-brake ass'y ❸.
3) Disengage the claw ❹, then pull out the T-brake ass'y ❺.

[Precautions on remounting]

○ Do not touch the brake shoes for the respective S-brake ❸ and T-brake ❺ assy's directly with your fingers.

○ Do not hold on to the S-brake ❸ and T-brake ❺ assy's by the arms when inserting them.

○ The T-brake ass'y ❺ must be positioned above the S-brake ass'y ❸ as shown in Fig. A below.

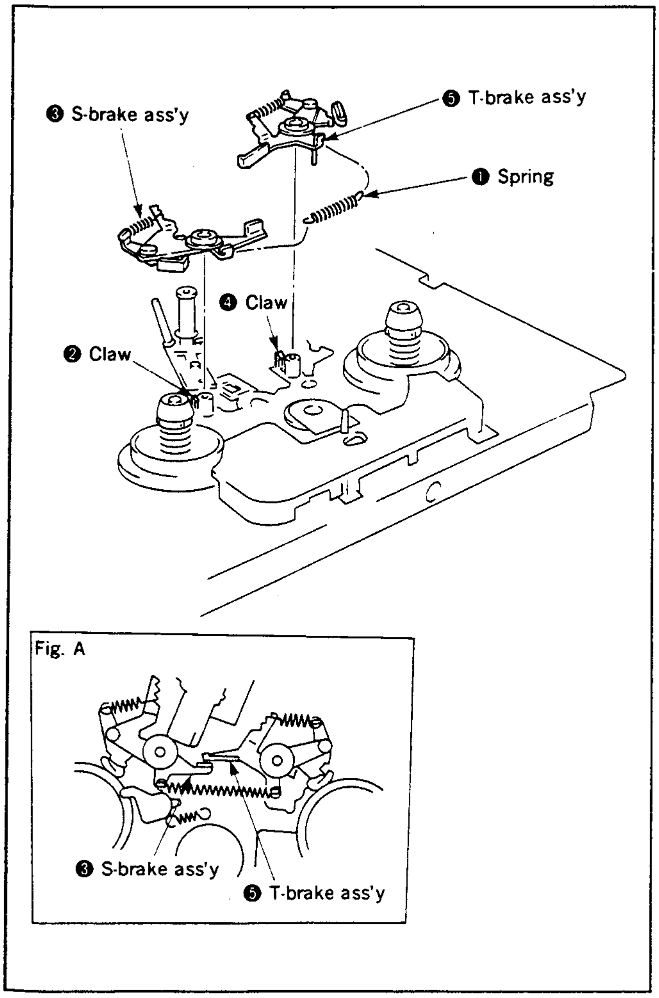

❸ S-brake ass'y
❺ T-brake ass'y
❶ Spring
❹ Claw
❷ Claw
Fig. A
❸ S-brake ass'y
❺ T-brake ass'y

Fig. 3-16.

3-11. T-SOFT BRAKE ASS'Y REV BRAKE ARM (Fig. 3-17)

1) Remove the end of the spring ❶ from the REV brake arm ❷.
2) Remove the end of the spring ❸ from the chassis.
3) Disengage the claw ❹, then pull out the T-soft brake ass'y ❺.
4) Disengage the claw ❻, then pull out the REV brake arm ❷.

[Precautions on remounting]

○ Do not touch the brake shoe of the T-soft brake ass'y ❺ directly with your fingers.

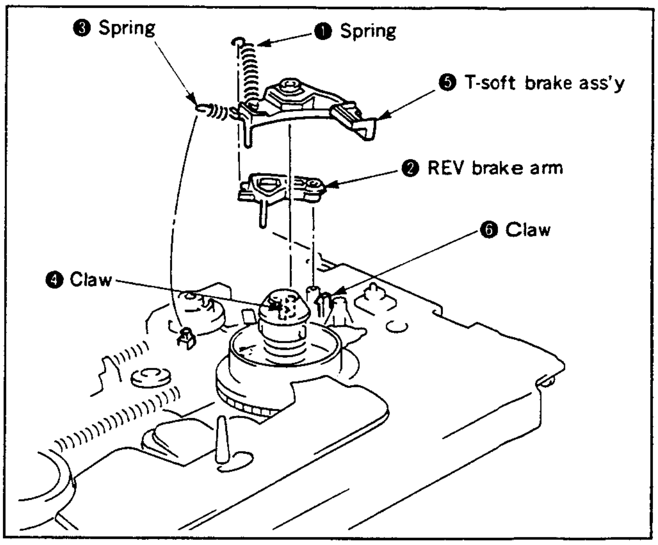

❸ Spring
❶ Spring
❺ T-soft brake ass'y
❷ REV brake arm
❻ Claw
❹ Claw

Fig. 3-17.

3-12. S-SOFT BRAKE ARM ASS'Y (Fig. 3-18)

1) Unhook the end of the spring ❶ from the chassis.
2) Disengage the claw ❷, then pull out the S-soft brake arm ass'y ❸.

[Precautions on remounting]

○ The S-soft brake arm ass'y must not clamp down the tension regulator band ass'y ❹ nor be positioned below the tension regulator band ❹.

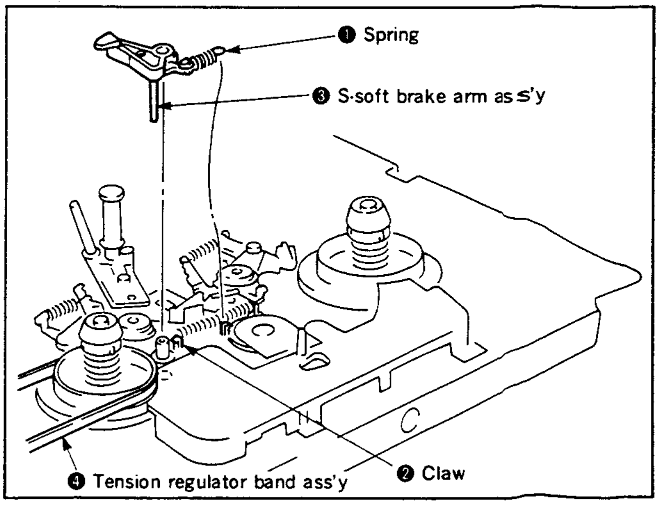

❶ Spring
❸ S-soft brake arm ass'y
❹ Tension regulator band ass'y
❷ Claw

Fig. 3-18.

3-13. S-GUIDE AND T-GUIDE ROLLER ASSY'S (Fig. 3-19)

1) Loosen the setscrew ❶, then remove the S-guide roller ass'y ❷ by turning it in the direction of the arrow Ⓐ.
2) Loosen the setscrew ❸, then remove the T-guide roller ass'y ❹ by turning it in the direction of arrow Ⓑ.

[Precautions on remounting]

○ Clean the surfaces of the S-guide roller ❷ and T-guide roller assy's ❹ where a tape is attached.

[Adjustment after replacement]

○ Perform tape path adjustments as described in 4-1.

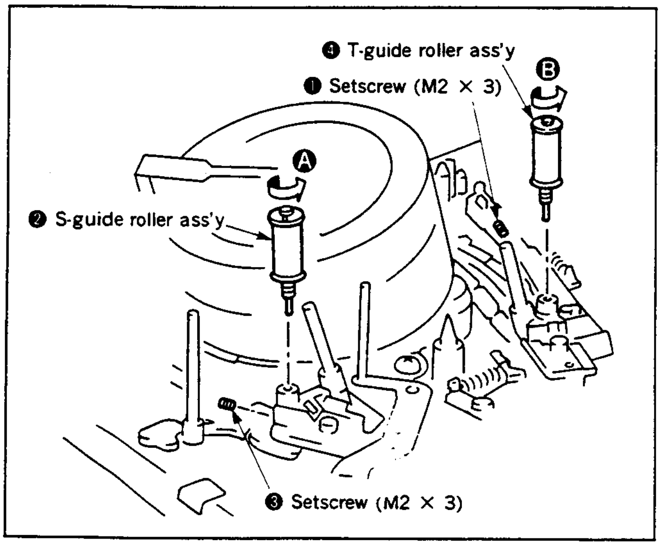

❹ T-guide roller ass'y
❶ Setscrew (M2 × 3)
Ⓑ
Ⓐ
❷ S-guide roller ass'y
❸ Setscrew (M2 × 3)

Fig. 3-19.

3-14. REEL LOCK RELEASE AND REW GEAR (Fig. 3-20)

1) Disengage the two claws ❶, then remove the reel lock release ❷ along with the spring ❸ (while the spring is still attached).
2) Next, pull out the REW gear ❹ with the spring bearing ❺ still attached).

[Precautions on remounting]

○ Make sure that the small thrust bearing ❻ remains attached.

○ Make sure that the two claws ❶ lock the real lock release ❷ in place.

○ Apply 1/2 drop of lubricant to the shaft ❼.

○ Make sure that the spring ❸ adheres to the reel lock release ❷ and that it fits inside the rib of the REW gear ❹.

○ Mount the REW gear ❹ by meshing it with gear ❽.

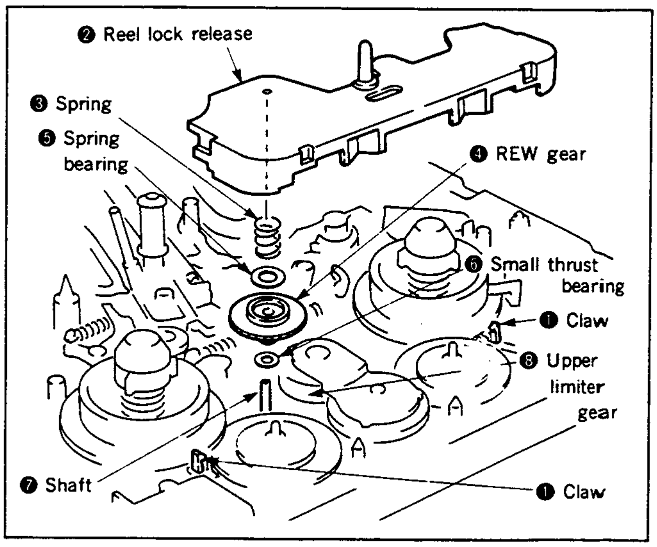

❷ Reel lock release
❸ Spring
❺ Spring bearing
❹ REW gear
❻ Small thrust bearing
❶ Claw
❽ Upper limiter gear
❼ Shaft
❶ Claw

Fig. 3-20.

3-15. TENSION REGULATOR ARM ASS'Y, TENSION REGULATOR BAND ASS'Y (Fig. 3-21)

1) Remove the reel lock release ass'y. (Refer to Fig. 3-14.)
2) Disengage the three claws marked ❶ and the claw marked ❷, then remove the tension regulator band ass'y ❸.
3) Unhook the end of the spring ❹ from the chassis.
4) Disengage the claw ❺, then pull out the tension regulator arm ass'y ❻.

[Precautions on remounting]

- ○ Roll up the tension regulator band ❸ on the S-reel by turning the S-soft brake arm ass'y ❼ in the direction of the arrow.
- ○ Hook the spring ❹ at the center of the spring hook ❽.
- ○ Do not touch the brake shoe of the tension regulator band ass'y ❸ directly with your fingers.
- ○ Mount the tension regulator arm ass'y ❻ at the position shown in Fig. A below.

[Adjustment after replacement]

- ○ Check the back tension. (Refer to 4-1-1.)
- ○ Perform tape path adjustments as described in 4-1.

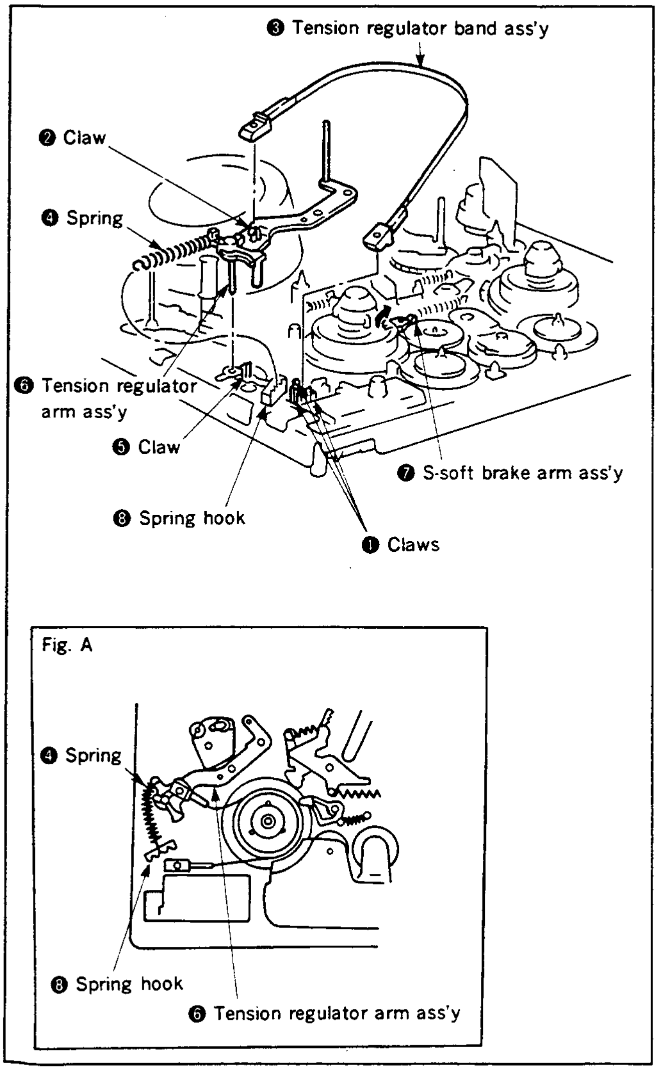

❸ Tension regulator band ass'y
❷ Claw
❹ Spring
❻ Tension regulator arm ass'y
❺ Claw
❼ S-soft brake arm ass'y
❽ Spring hook
❶ Claws
Fig. A
❹ Spring
❽ Spring hook
❻ Tension regulator arm ass'y

Fig. 3-21.

3-16. S TAKE-UP ASS'Y (Fig. 3-22)

1) Remove the tension regulator arm ass'y and the tension regulator band ass'y. (Refer to 3-15.)
2) Unhook the end of the spring ❶ from the S take-up arm ❷.
3) Disengage the two claws ❸, then remove the S take-up ass'y ❹.

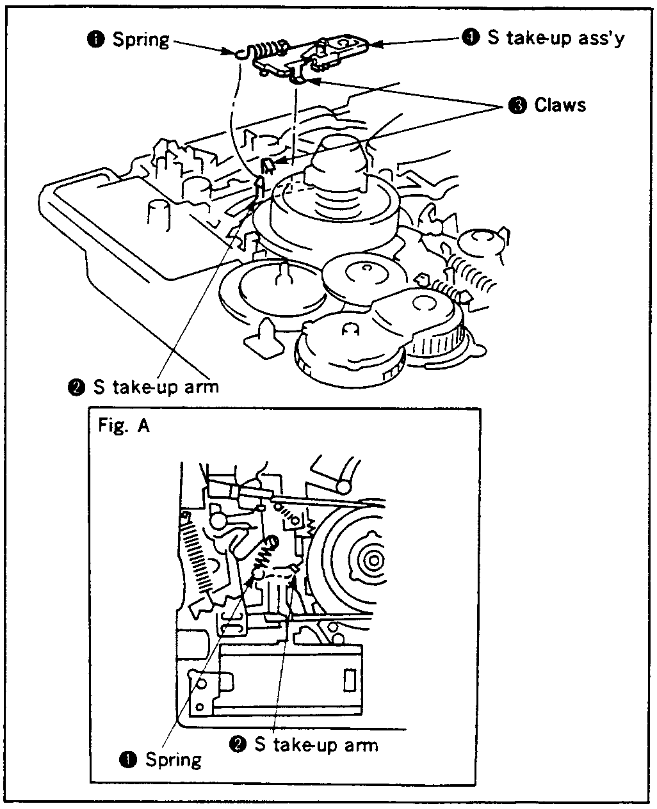

❶ Spring
❹ S take-up ass'y
❸ Claws
❷ S take-up arm
Fig. A
❶ Spring
❷ S take-up arm

Fig. 3-22.

MC-Service

3-17. S-REEL ASS'Y (Fig. 3-23)

1) Remove the S-soft brake arm ass'y. (Refer to 3-12.)
2) Remove the reel lock release. (Refer to 3-14.)
3) Remove the tension regulator band ass'y. (Refer to 3- 15.)
4) Turn the S-brake ass'y ❶ in the direction of the arrow.
5) Pull out the S-reel ass'y ❷.

[Precautions on remounting]

- ○ At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- ○ Do not touch the outer edge of the S-reel ass'y ❷ directly with your fingers.
- ○ Apply 1/2 drop of lubricant over the shaft ❹.
- ○ Mount the S-reel ass'y ❷ while meshing it with the relay gear ❺.

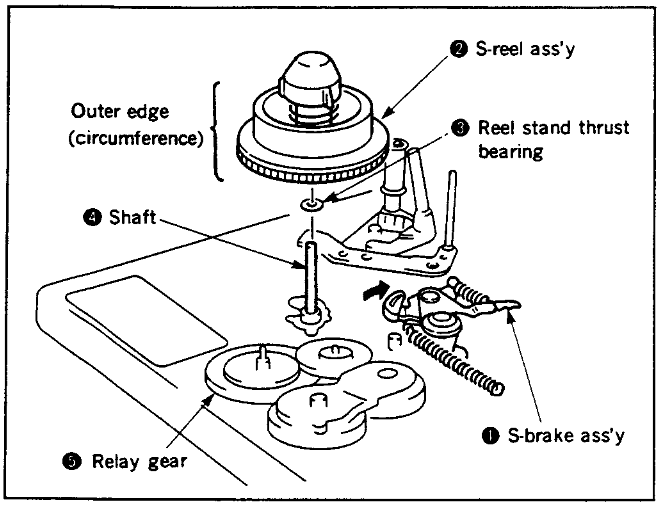

❷ S-reel ass'y
Outer edge (circumference)
❸ Reel stand thrust bearing
❹ Shaft
❶ S-brake ass'y
❺ Relay gear

Fig. 3-23.

3-18. T-REEL ASS'Y (Fig. 3-24)

1) Remove the T-soft brake ass'y. (Refer to 3-11.)
2) Remove the reel lock release ass'y. (Refer to 3-14.)
3) Turn the T-brake ass'y ❶ in the direction of the arrow.
4) Pull out the T-reel ass'y ❷.

[Precautions on remounting]

- ○ At least one reel stand thrust bearing ❸ must be attached (but not more than two).
- ○ Do not touch the outer edge of the T-reel ass'y ❷ directly with your fingers.
- ○ Apply 1/2 drop of lubricant on the shaft ❹.
- ○ Mount the T-reel ass'y ❷ while meshing it with the relay gear ❺.

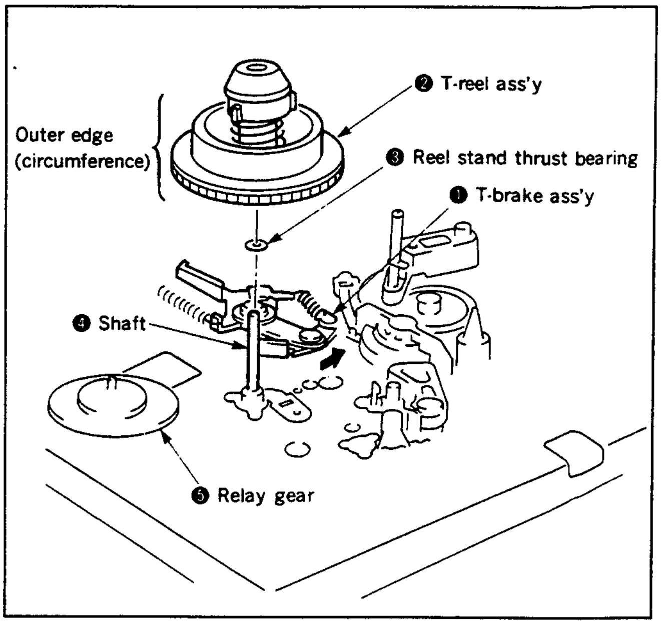

❷ T-reel ass'y
Outer edge (circumference)
❸ Reel stand thrust bearing
❶ T-brake ass'y
❹ Shaft
❺ Relay gear

Fig. 3-24.

3-19. PENDULUM ARM ASS'Y (Fig. 3-25)

1) Remove the reel lock release ass'y. (Refer to 3-14.)
2) Remove the washer 2 ❶, then pull out the pendulum arm ass'y ❷.

[Precautions on remounting]

- ○ Fit the boss on the pendulum cap ❸ into the gap in the pendulum slide plate ❹.
- ○ The plastic slider ❺ must be attzched.
- ○ Apply 1/2 drop of lubricant on the shaft ❻.
- ○ Mount the pendulum arm ass'y ❷ by meshing it with the upper limiter gear ❼.

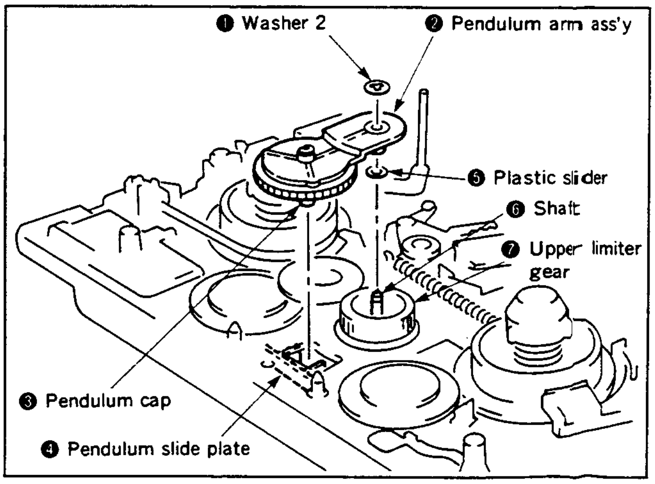

❶ Washer 2
❷ Pendulum arm ass'y
❺ Plastic slider
❻ Shaft
❼ Upper limiter gear
❸ Pendulum cap
❹ Pendulum slide plate

Fig. 3-25.

3-20. RELAY GEAR (Fig. 3-26)

1) Remove the reel lock release and REW gear. (Refer to 3-14.)
2) Remove the S-reel ass'y. (Refer to 3-17.)
3) Remove the T-reel ass'y. (Refer to 3-18).
4) Pull out the two relay gears ❶.

[Precautions on remounting]

○ The relay gears ❶ must rotate smoothly after remounting.

○ Apply 1/2 drop of lubricant to the respective shafts ❷.

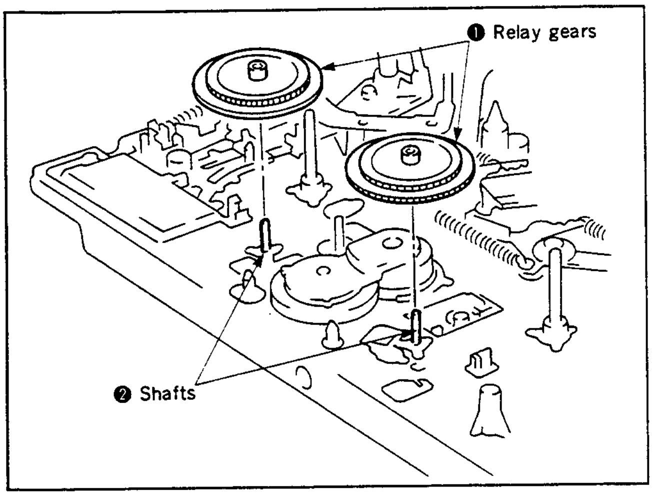

❶ Relay gears
❷ Shafts

Fig. 3-26.

3-21. ADJUSTER ARM ASS'Y (Fig. 3-27)

1) Remove screw ❶.
2) Remove washer ❻.
3) Remove the end of the spring ❷ hooked to the chassis.
4) Remove the end of the timing belt ❸ from the capstan motor arm ass'y.
5) Disengage the claw ❹, then remove the adjuster arm ass'y.

[Precautions on remounting]

○ First mount the adjuster arm ass'y ❺, timing belt ❸ and spring ❷, then attach the washer ❻ and fasten the screw ❶.

○ The screw fastening torque must be within 5kg•cm (±1kg•cm).

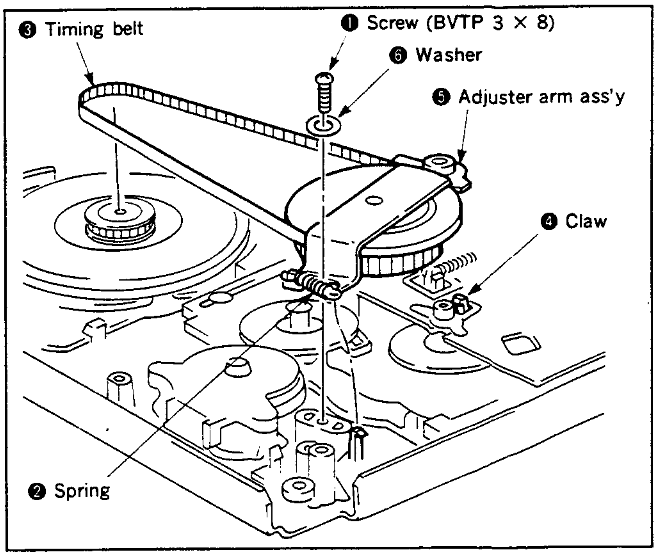

❸ Timing belt
❶ Screw (BVTP 3 × 8)
❻ Washer
❺ Adjuster arm ass'y
❹ Claw
❷ Spring

Fig. 3-27.

3-22. CAP BRAKE ASS'Y (Fig. 3-28)

1) Loosen the screw ❶, then push the timing belt ❷ in the direction of the arrow.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage claw ❹, then pull out CAP brake ass'y ❺.

[Precautions on remounting]

○ Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.

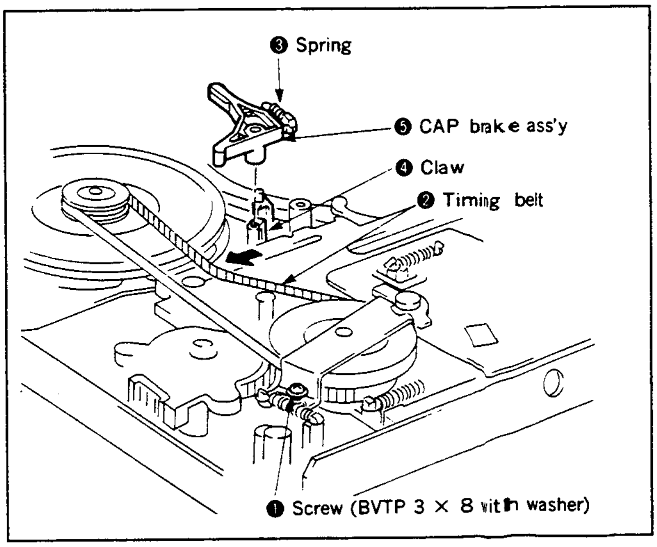

❸ Spring
❺ CAP brake ass'y
❹ Claw
❷ Timing belt
❶ Screw (BVTP 3 × 8 with washer)

Fig. 3-28.

3-23. CAPSTAN MOTOR (Fig. 3-29)

1) Turn the ACE ass'y ❶ in the direction of arrow Ⓐ as shown in Fig. A below, then remove three screws ❷.
2) Remove screw ❸, then remove the rotor clamp ❹.
3) Turn the CAP brake ass'y ❺ in the direction of arrow Ⓑ, then pull out the capstan motor ❻.

[Precautions on remounting]

- ○ Clean the section of the capstan motor ❻ where the tape is attached.
- ○ Do not touch the brake shoe of the CAP brake ass'y ❺ directly with your fingers.
- ○ Of the three screws ❷, first fasten screw A temporarily, then fasten screws B and C firmly, followed by screw A.
- ○ The screw fastening torque must be within 3kg•cm ± 1kg•cm.

[Adjustments after mounting]

- ○ Perform tape path adjustments as described in 4-1.

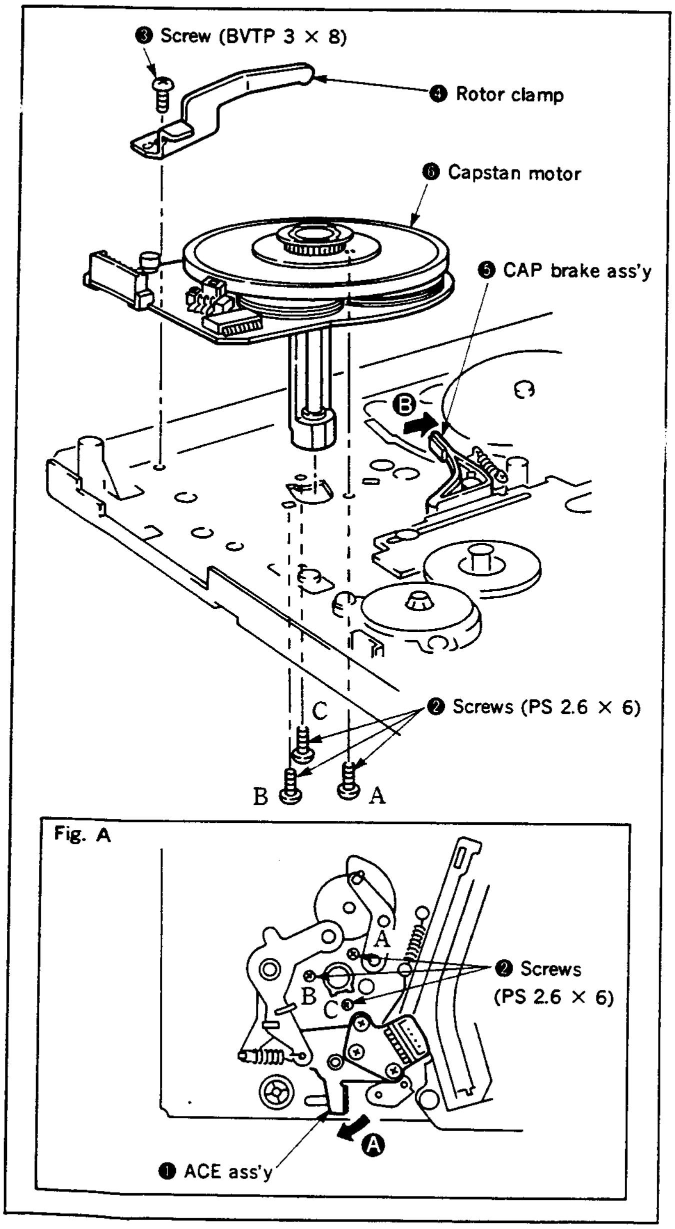

❸ Screw (BVTP 3 × 8)
❹ Rotor clamp
❻ Capstan motor
❺ CAP brake ass'y
Ⓑ
C
❷ Screws (PS 2.6 × 6)
B
A
Fig. A
A
B
C
❷ Screws
(PS 2.6 × 6)
❶ ACE ass'y
Ⓐ

Fig. 3-29.

3-24. ROTARY SWITCH (Fig. 3-30)

1) Remove the adjuster arm ass'y. (Refer to 3-21.)
2) Remove the screws ❶ and ❷, then pull out the rotary switch ❸.

[Precautions on remounting]

- ○ Match up the ● mark on the rotary switch ❸ with the ▲ mark on the RKB cam gear ❹ as shown in Fig. A.
- ○ Match up holes ❻ on the pendulum arm ❺ and the chassis.

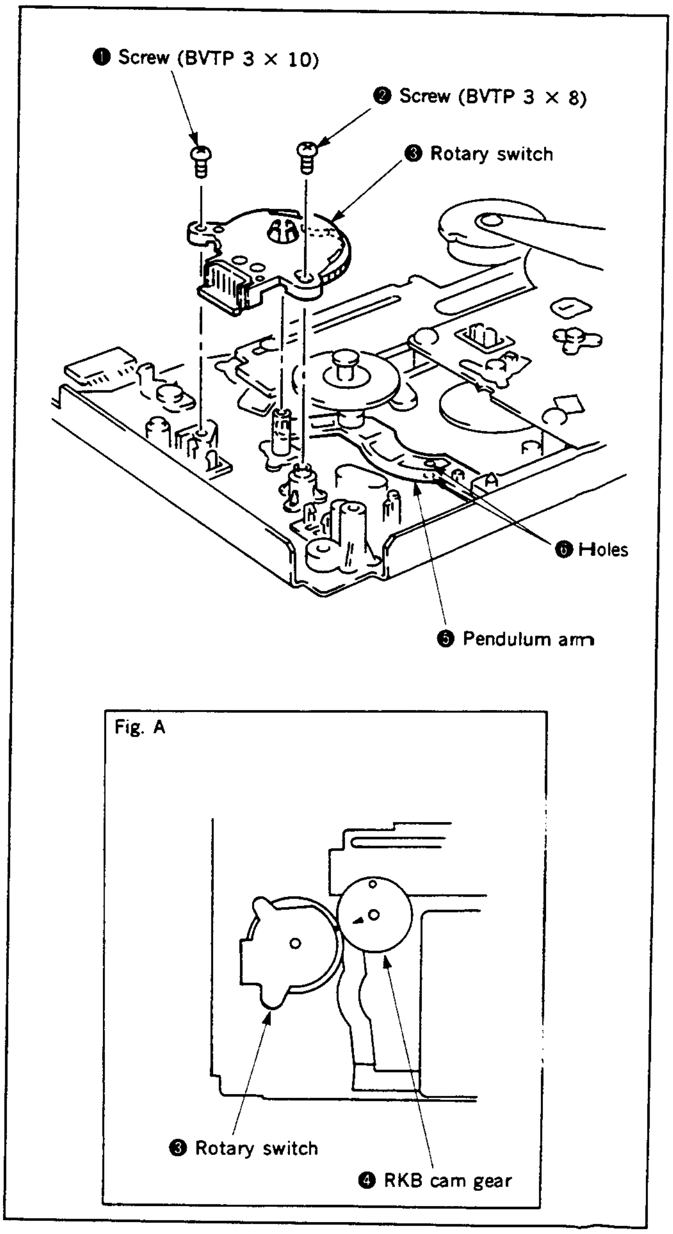

❶ Screw (BVTP 3 × 10)
❷ Screw (BVTP 3 × 8)
❸ Rotary switch
❻ Holes
❺ Pendulum arm
Fig. A
❸ Rotary switch
❹ RKB cam gear

Fig. 3-30.

3-25. RKB CAM GEAR (Fig. 3-31)

1) Remove the adjuster arm ass'y. (Refer to 3-22.)
2) Remove washer 2 ❶, then pull out the RKB cam gear ❷.

[Precautions on remounting]

- ○ When the limiter arm ❸ is pushed in the direction of the arrow, the pin must fit into the notch on the RKB cam gear ❷.
- ○ The ■ mark on rotary switch ❺ must match up with the ◀ mark on the RKB cam gear ❷ as shown in Fig. A.
- ○ Apply 1/2 drop of lubricant to shaft ❻.
- ○ Match up the holes ❹ on the RKB cam gear ❷ and the mode slide plate.

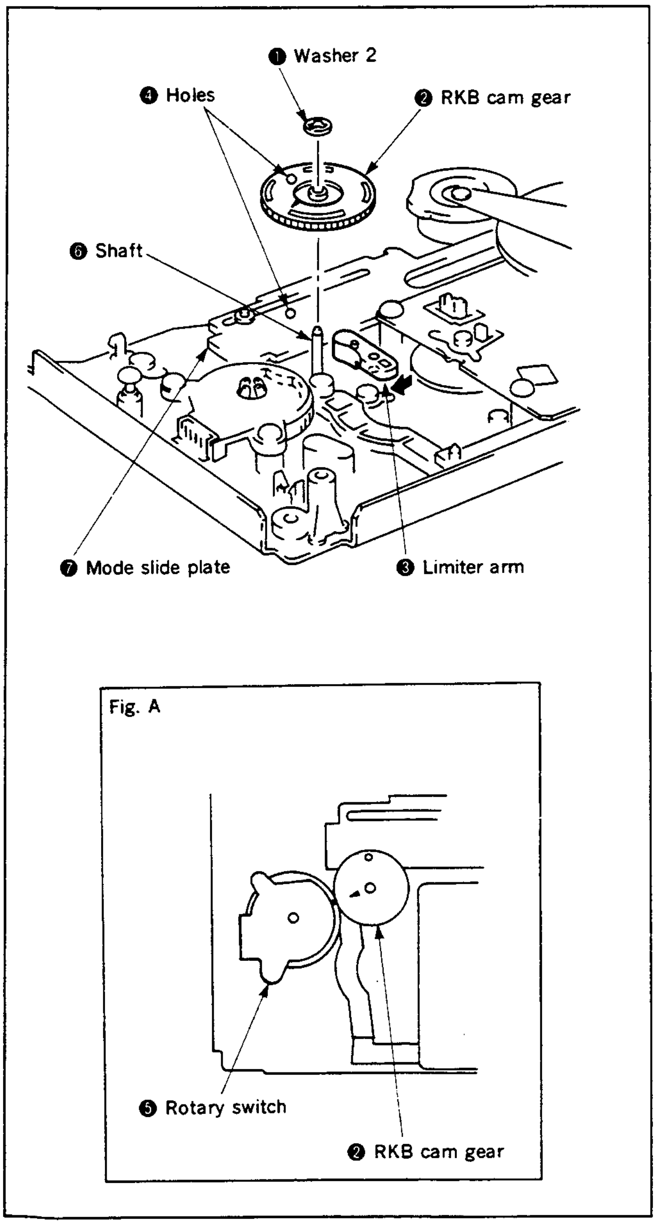

❶ Washer 2
❹ Holes
❷ RKB cam gear
❻ Shaft
❼ Mode slide plate
❸ Limiter arm
Fig. A
❺ Rotary switch
❷ RKB cam gear

Fig. 3-31.

3-26. SUB-CHASSIS ASS'Y (Fig. 3-32)

1) Remove the reel lock release arm and REW gear. (Refer to 3-15.)
2) Remove the pendulum arm ass'y. (Refer to 3-19.)
3) Remove the adjuster arm ass'y. (Refer to 3-22.)
4) Remove the three screws ❶, then remove sub-chassis ass'y ❷.

[Precautions on remounting]

- ○ The switching arm ❸ must be switched in the direction of the arrow.
- ○ The screws must be fastened in order of a, b and c.
- ○ Mount the sub-chassis carefully so as not to damage the gear.
- ○ The corner edge of the lug terminal ❹ must fit into the gap between the chassis ass'y ❷ and mechanism chassis.

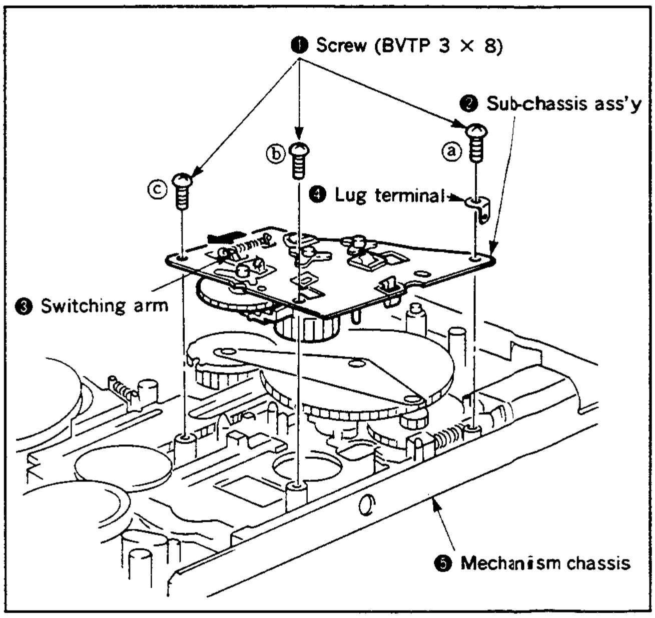

❶ Screw (BVTP 3 × 8)
❷ Sub-chassis ass'y
ⓑ
ⓐ
ⓒ
❹ Lug terminal
❸ Switching arm
❺ Mechanism chassis

Fig. 3-32.

3-27. PENDULUM SLIDE PLATE, PENDULUM ARM (Fig. 3-33)

1) Remove the rotary switch. (Refer to 3-24.)
2) Remove the RKB cam gear. (Refer to 3-25.)
3) Remove the sub-chassis ass'y. (Refer to 3-26.)
4) Disengage the two claws ①, then pull out the pendulum slide plate ②.
5) Unhook the spring ③.
6) Disengage the claw ④, then pull out pendulum arm ⑤.

[Precautions on remounting]

○ The shaft ⑥ must fit into hole ⑦.

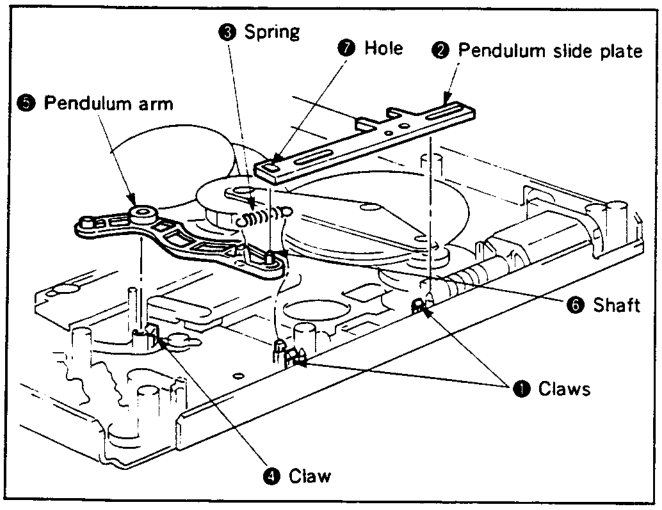

③ Spring
⑦ Hole
② Pendulum slide plate
⑤ Pendulum arm
⑥ Shaft
① Claws
④ Claw

Fig. 3-33.

3-28. THE LIMITER ARM AND LIMITER SLIDE PLATE (Fig, 3-24)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the sub-chassis. (Refer to Fig. 3-26.)
3) Disengage the claw ①, then pull out the limiter arm ②.
4) Disengage the two claws ③, then pull out the limiter slide plate ④.

[Precautions on remounting]

○ The shaft ⑤ must fit into the hole ⑥.

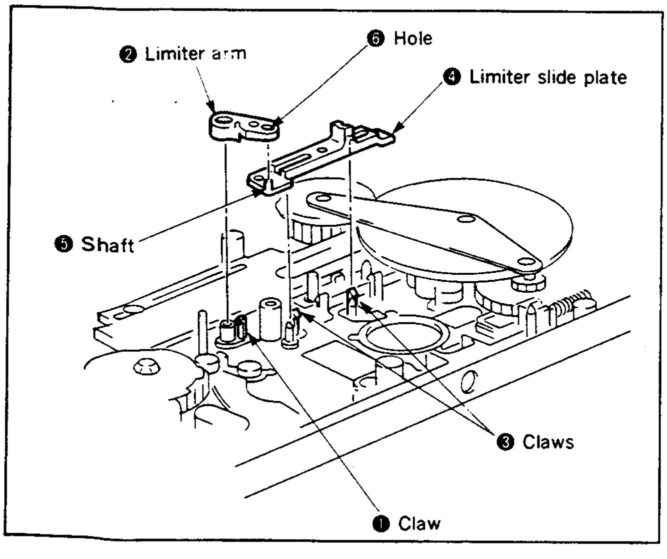

② Limiter arm
⑥ Hole
④ Limiter slide plate
⑤ Shaft
③ Claws
① Claw

Fig. 3-34.

3-29. CAM MOTOR (Fig. 3-35)

1) Remove the sub- chassis ass'y. (Refer to 3-26.)
2) Disengage the six claws ①, then remove the cam motor ② and worm gear ③.

[Precautions on remounting]

○ Check the meshing of cam motor ② and worm gear ③.

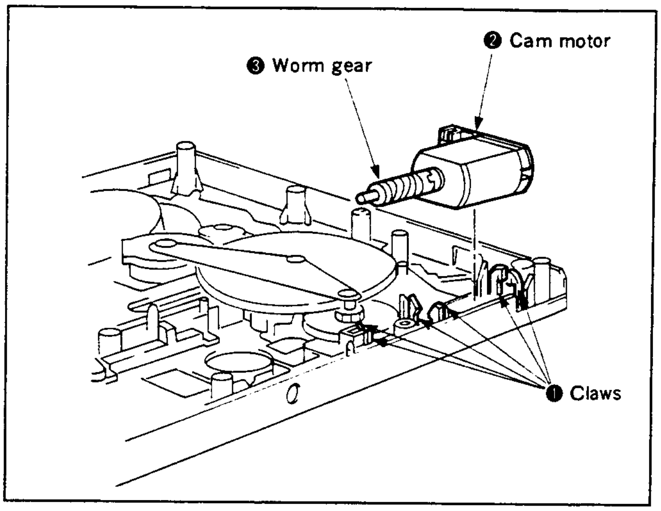

② Cam motor
③ Worm gear
① Claws

Fig. 3-35.

3-30. CAM GEAR (Fig. 3-36)

1) Remove the three washers 2 ①, then pull out the cam gear holder ②.
2) Pull out the cam gear ③.

[Precautions on remounting]

○ Match up the right loading gear ass'y, the tension regulator arm, the S take-up arm, the work wheel, the brake arm and the mode slide plate with respective holes ④ to ⑨ on the chassis in that order.

○ Match up the hole ⑩ on the mode slide plate with the hole ⑩ in cam gear ③.

○ Apply 1/2 drop of lubricant to the shaft ⑪.

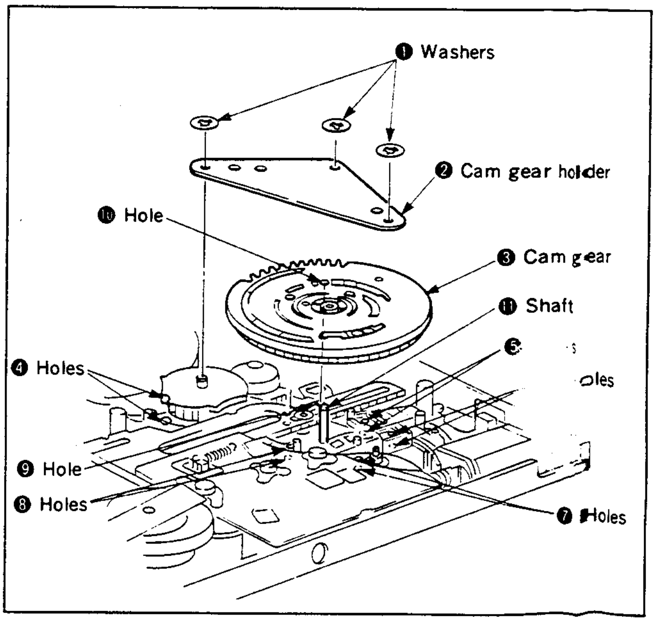

① Washers
② Cam gear holder
⑩ Hole
③ Cam gear
⑪ Shaft
⑥ Holes
④ Holes
⑨ Hole
⑧ Holes
⑦ Holes

Fig. 3-36.

3-31. TENSION REGULATOR ARM, S TAKE-UP ARM (Fig. 3-37)

1) Remove the cam gear. (Refer to 3-30)
2) Disengage the claw ❶, then remove the tension regulator arm ❷.
3) Remove the end of the spring ❸ from the S take-up arm ❹.
4) Disengage the claw ❺, then pull out S take-up arm ❹.

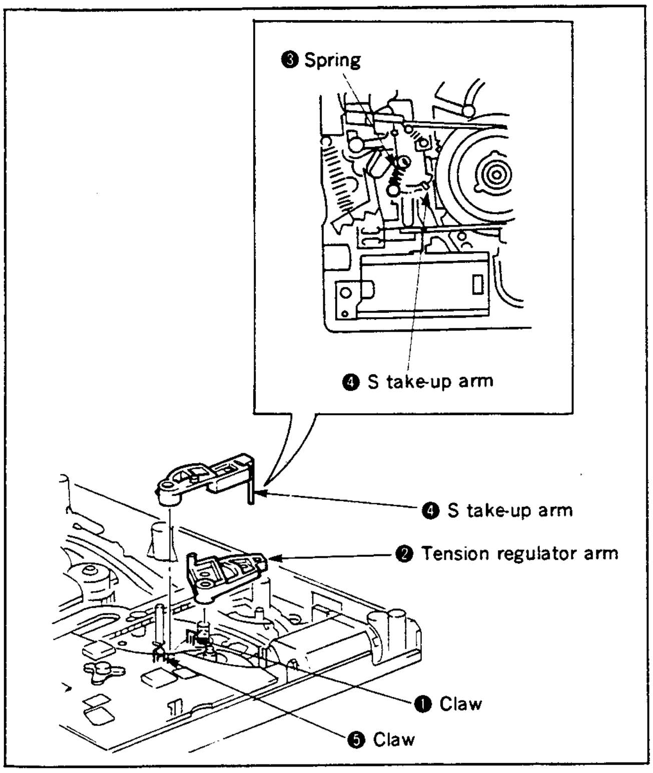

❸ Spring
❹ S take-up arm
❹ S take-up arm
❷ Tension regulator arm
❶ Claw
❺ Claw

Fig. 3-37.

3-32. MODE SLIDE PLATE, RVS RELAY GEAR (Fig. 3-38)

1) Remove the RKB cam gear. (Refer to 3-25.)
2) Remove the cam gear. (Refer to 3-30.)
3) Remove the two washers 2 ❶.
4) Turn the CAP brake ❷ in the direction of the arrow, then pull out mode slide plate ❸.
5) Pull out the RVS relay gear ❹.

[Precautions on remounting]

○ Match up the hole ❺ on the RVS relay gear ❹ with hole ❺ in the chassis.
○ Match up the holes ❻ on the mode slide plate ❸ with holes ❻ in the chassis.
○ Apply 1/2 drop of lubricant to the shaft ❼.

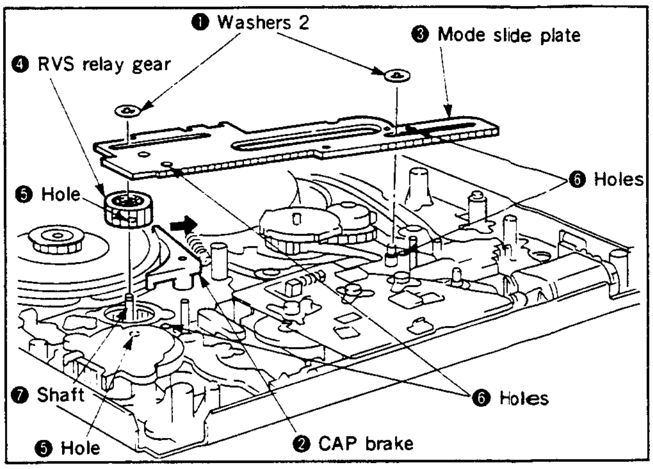

❶ Washers 2
❸ Mode slide plate
❹ RVS relay gear
❺ Hole
❻ Holes
❼ Shaft
❻ Holes
❺ Hole
❷ CAP brake

Fig. 3-38.

3-33. BRAKE ARM, BRAKE SLIDE PLATE (Fig. 3-39)

1) Remove the sub-chassis. (Refer to 3-26.)
2) Remove the cam gear. (Refer to 3-30.)
3) Disengage the claw ❶, then pull out the brake arm ❷.
4) Disengage the two claws ❸, then pull out the brake slide plate ❹.

[Precautions on remounting]

○ Insert the shaft ❺ into hole ❻.

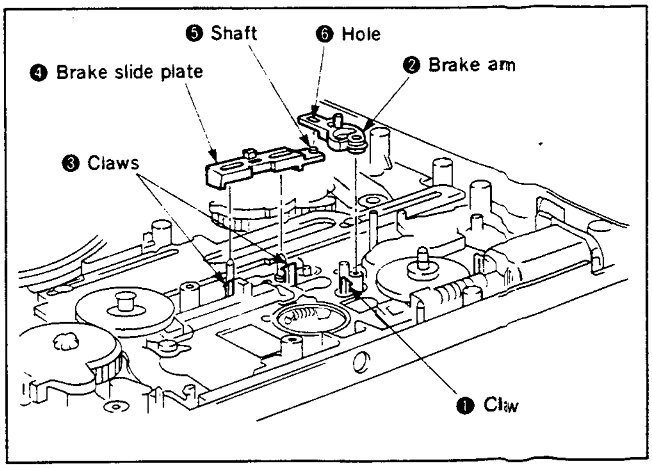

❺ Shaft
❻ Hole
❹ Brake slide plate
❷ Brake arm
❸ Claws
❶ Claw

Fig. 3-39.

3-34. RIGHT SHUTTLE, RIGHT LOADING GEAR ASSY'S (Fig. 3-40)

1) Remove the mode slide plate. (Refer to 3-32.)
2) Remove the plastic slider ❶, then pull out the right shuttle ass'y ❷.
3) Pull out the right loading gear ass'y ❸.

[Precautions on remounting]

○ Match up the ▲ mark on the right loading gear ass'y ❸ with the ▲ mark on the left loading gear ass'y ❹ as shown in Fig. A below.
○ Apply 1/2 drop of lubricant to the shaft ❺.
○ Do not hold on to the arm when pressing on the right loading gear ❸.
○ Clean the section of the right shuttle ass'y ❷ where the tape is attached.

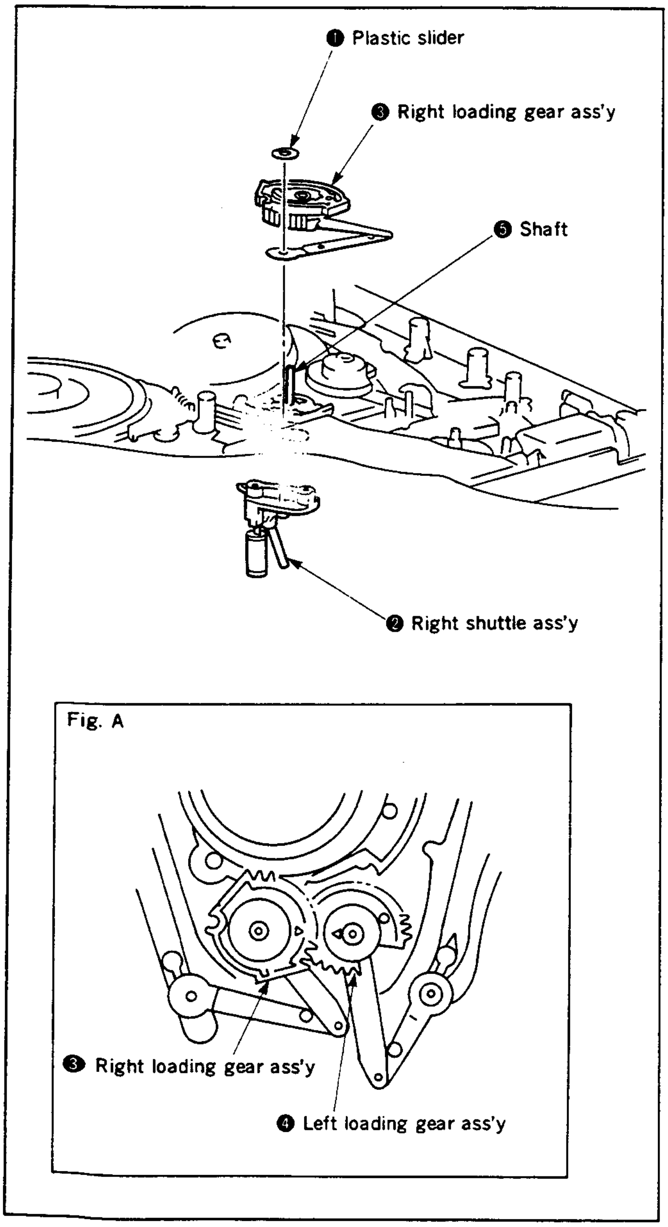

❶ Plastic slider
❸ Right loading gear ass'y
❺ Shaft
❷ Right shuttle ass'y
Fig. A
❸ Right loading gear ass'y
❹ Left loading gear ass'y

Fig. 3-40.

3-35. LEFT SHUTTLE ASS'Y, LEFT LOADING GEAR ASS'Y (Fig. 3-41)

1) Remove the right shuttle ass'y and right loading gear ass'y. (Refer to 3-34.)
2) Remove the plastic slider ❶, then pull out the left shuttle ass'y ❷.
3) Remove washer 2 ❸, then pull out the left loading gear ass'y ❹.

[Precautions on remounting]

○ Apply 1/2 drop of lubricant to shaft ❺.
○ The tension regulator arm ass'y ❻ and left shuttle ass'y ❷ must be positioned as shown in Fig. A below.
○ Do not hold on to the arm of the left loading gear ass'y ❹ when the left loading gear ass'y ❹ is pressed.
○ Clean the section of the felt shuttle ass'y ❷ where the tape is attached.

[Adjustments after replacement]

○ Perform tape path adjustments as described in 4-1.

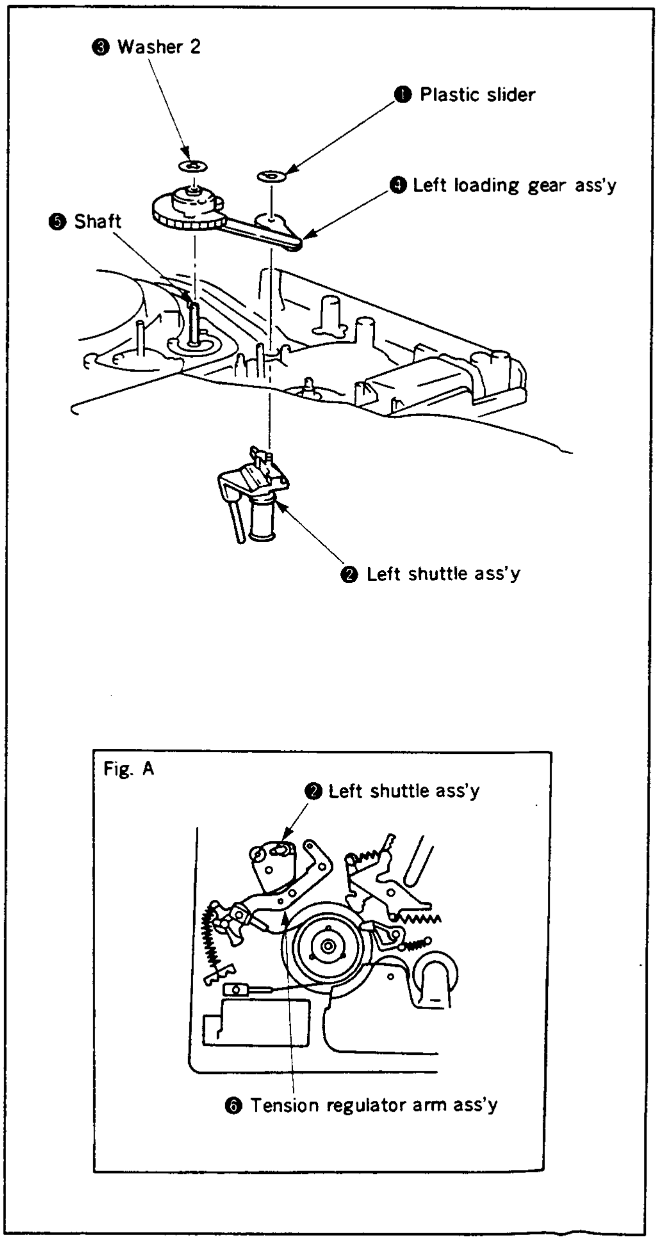

❸ Washer 2
❶ Plastic slider
❹ Left loading gear ass'y
❺ Shaft
❷ Left shuttle ass'y
Fig. A
❷ Left shuttle ass'y
❻ Tension regulator arm ass'y

Fig. 3-41.

3-36. C-ROLLER ARM ASS'Y, C-ROLLER RELEASE LEVER (Fig. 3-42)

1) Disengage the claw ❶, then pull out the C-roller arm ass'y ❷.
2) Unhook the end of the spring ❸ from the chassis.
3) Disengage the two claws ❹, then pull out the C-roller release lever ❺.

[Precautions on remounting]

○ Mount C-roller arm ass'y ❷ so that the hole ❻ on the C-roller arm ass'y ❷ fits into the boss ❼ on the C-roller release lever ❺.

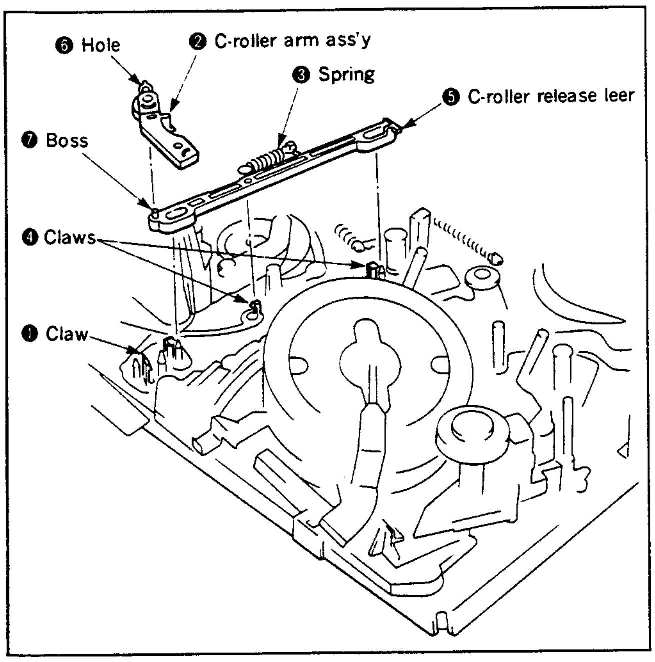

❻ Hole
❷ C-roller arm ass'y
❸ Spring
❺ C-roller release leer
❼ Boss
❹ Claws
❶ Claw

Fig. 3-42.

4. ADJUSTMENT

4-1. TAPE PATH ADJUSTMENT

The "Tape path" refers to the route of the tape from the supply reel disk to the take-up reel disc via the video heads. Each component part of the tape transport system, particularly the surface of parts which make direct contact with the tape must always be kept clean, free of dust, oil, scratches and so forth.

The tape path system is factory preadjusted. when parts of the tape transport system are replaced, be sure to make the required adjustments as precisely as possible in order to ensure stable tape transport.

4-1-1. Tension regulator position/tension adjustment (Fig. 4-1.)

Purpose: Stabilizes contact of the video head and the tape to maintain the tension of the tape so that it feeds at a constant level.

- **Position adjustment**

Mode	Threading is completed without a cassette loaded. (Refer to section 1-2.)
Adjustment locations	Tension band holder

[Adjustment method]

1) Allow the unit to go through the threading procedure without a cassette loaded.
2) Set the VTR unit to playback, then turn the tension band adjuster lever so that the gap between guide No. 0 and tension arm is within 4.5±0.4mm. *(Set the unit to playback without a cassette loaded.)
3) After adjustment, go through the loading procedure once more without a cassette loaded, then check the position of the tension arm.

- **Tension adjustment**

Mode	Playback
Measuring instrument/tool	Torque cassette
Adjustment locations	Position for hooking the tension spring
Specification	28 to 34 g•cm

[Adjustment method]

1) Playback the torque cassette.
2) Check that the center value deviation reading on the torque cassette meets with the standards.
3) When the reading is higher than the standards: Move the spring toward direction Ⓐ.
   When the reading is less than the standards: Move the spring toward direction Ⓑ.

Note: Move the spring to the tension spring hook position and recheck the tension arm position. If the arm position is misaligned, adjust the position and tension of the tension arm.

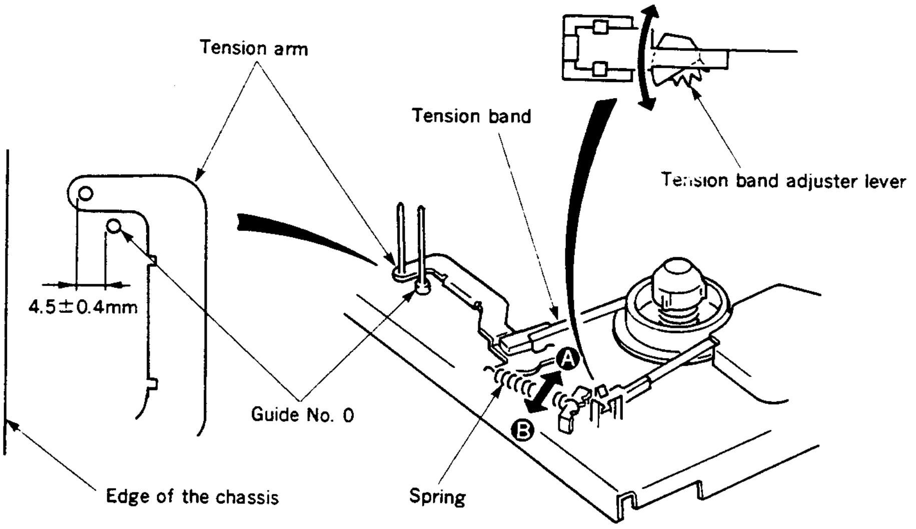


Fig. 4-1.

4-1-2. Height adjustment of the guide roller No. 2 (Fig. 4-2)

Mode	Playback
Tool	Blank tape
Adjustment locations	Guide roller height adjuster screw

[Adjustment method]

1) Load a new tape in the unit, then play it back.
2) Make sure that the lower flange of guide roller No. 2 does not curl up.
3) When the tape curls up : Turn the guide roller adjuster screw clockwise.
   When the tape does not fit into the lower flange : Turn the guide roller adjuster screw counter-clockwise.
4) After the above check, separate the tension arm from the tape, then re-attach it slowly. At this time, check if the tape curls up at the lower flange of the guide roller No. 2 and if the curl disappears within 2 seconds.
5) If curl does not disappear in two seconds : Turn the adjuster screw clockwise.
   If the tape does not curl up : Turn the adjuster screw counter-clockwise.

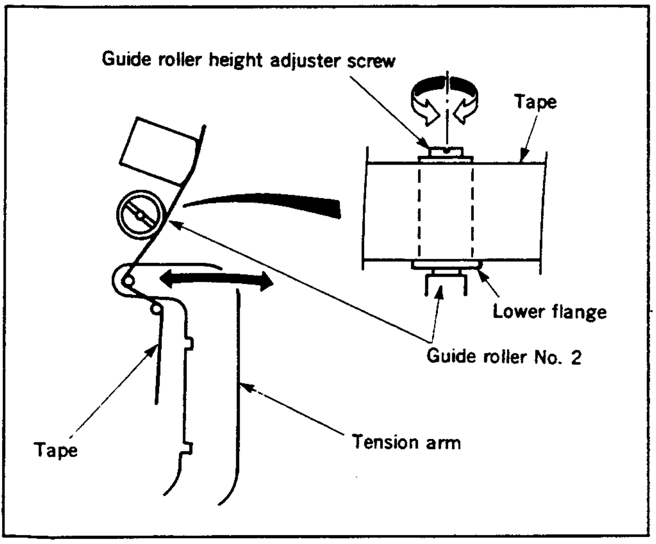


Fig. 4-2.

4-1-3. Height adjustment of guide roller No. 7 and the RVS arm (Fig. 4-3.)

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut

[Adjustment method]

1) Load the tape into the VTR and play it back, then adjust the height of the guide roller No. 7 so that the tape runs along the lower flange of guide roller No. 7.
2) If the guide roller is too low : Turn the height adjuster nut counter-clockwise.
   If the guide roller is too high : Turn the height adjuster nut clockwise.
3) Run the tape in REV, then adjust the height of the RVS arm so that the tape runs along guide roller No. 7.
4) If the tape gets caught in the upper flange of guide roller No. 7 : Turn the RVS arm height adjuster nut clockwise.
5) If the tape catches on the lower flange of guide roller No. 7 : Turn the RVS arm height adjuster nut counter-clockwise.

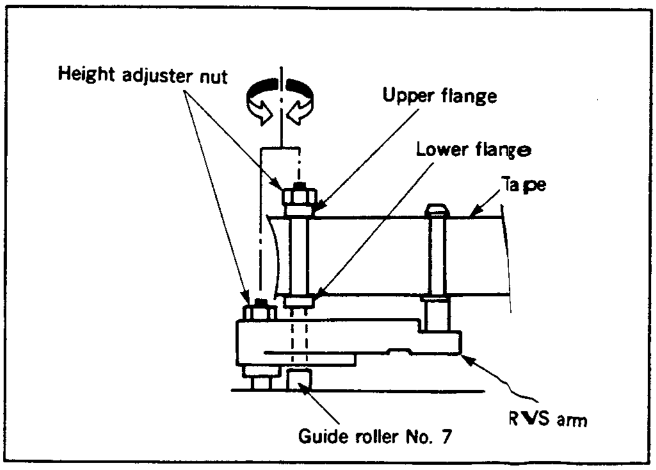


Fig. 4-3.

MC-Service

4-1-4. Height adjustment of guide rollers No. 3 and No. 6 (Fig. 4-4)

Mode	Playback
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller height adjuster screw.

[Adjustment method]

1) Tracking (playback): Turn off the auto tracking, then press the tracking buttons ▽ and △ simultaneously to set the tracking at the center position.
(If adjustment is made after the drum is replaced, the tracking must be set at the max. Rf output position.)
2) Height adjuster screw: Even out the RF output waveforms.
3) Press the tracking buttons (playback), ▽ and △ alternately.
4) Check that RF output drops the same amount at the front and rear edges.

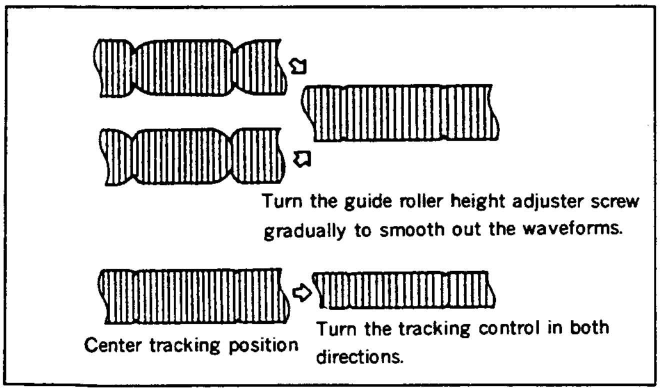

Turn the guide roller height adjuster screw gradually to smooth out the waveforms.
Center tracking position
Turn the tracking control in both directions.

Fig. 4-4.

4-1-5. ACE head ass'y adjustment (rough adjustment) (Figs. 4-5 and 4-6)

Purpose : Allows the tape to make even contact with the head for recording and playback of the specified track.

Mode	Playback
Tool	Blank tape
Adjustment locations	Height adjuster nut, tilt adjuster screw

[Adjustment method]

1) Mount the ACE head ass'y. At this time, adjust the height so that the height of guide flange No. 7 matches the level of the lower edge of the control head.
2) Remove the adjustment tool and load a new tape, then set the unit for playback.
3) Check that the tape does not curl or raise up noticeably near the ACE head.
4) If the yape curls up or rarises noticeably, readjust the tilt adjuster screw, the azimuth adjuster screw and the height adjuster nut.
(The height of the ACE head should be adjusted so that the lower edge of the tape is approx. 0.1 to 0.15 mm from the control head.)
5) Perform precision adjustment.

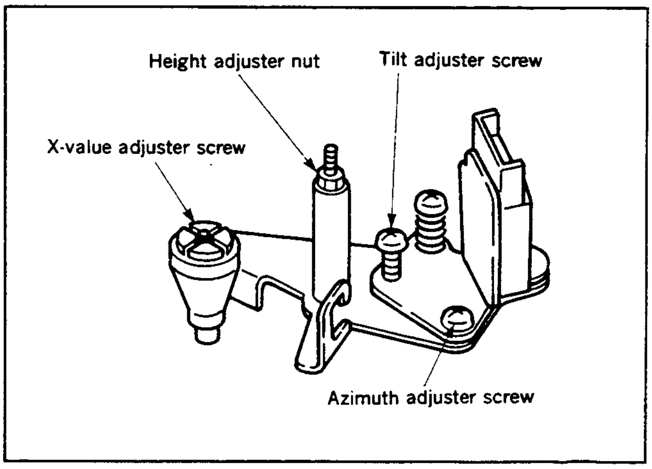

Height adjuster nut
Tilt adjuster screw
X-value adjuster screw
Azimuth adjuster screw

Fig. 4-5.

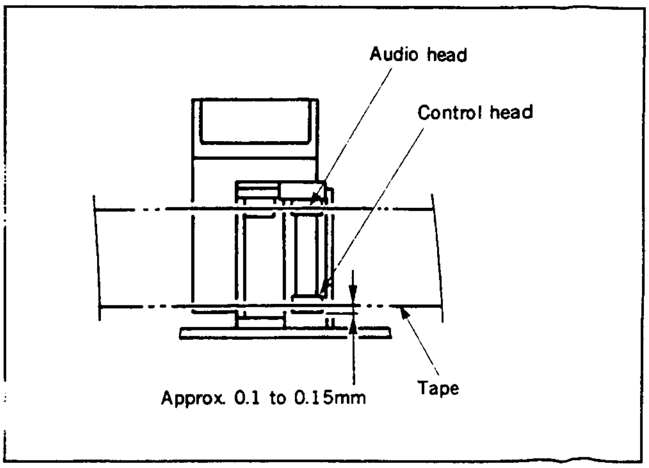

Audio head
Control head
Approx. 0.1 to 0.15mm
Tape

Fig. 4-6.

4-1-6. ACE head assembly adjustment (precision adjustment)

Mode	Playback
Signal	Alignment tape (JVC-MH-1 1KHz)
Measuring instrument	Oscilloscope
Measuring point	Audio output terminal
Adjustment locations	Azimuth adjuster screw Height adjuster nut Tilt adjuster screw

[Adjustment method]

1) Adjust the tilt adjuster screw in the FWD or REV mode so that the lower flange of guide No. 7 does not curl up or raise.
2) Alternately adjust the azimuth adjuster screw, the height adjuster nut, and the tilt adjuster screw to maintain even audio output at maximum with minimum deviation.

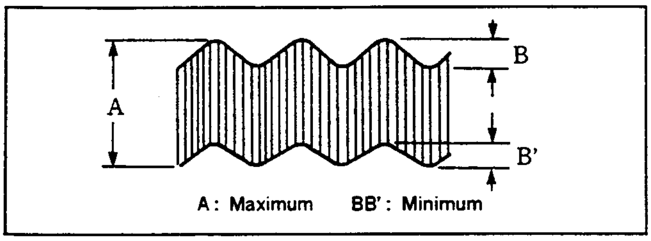

A
B
B'
A: Maximum
BB': Minimum

Fig. 4-7.

4-1-7. X-value adjustment

Purpose : To obtain compatibility with other VTR.

Precaution : Be sure to perform the preset tracking adjustment before perform this adjustment. (Refer to the Service Guide.)
Turn off the auto tracking and set the VTR for manual tracking mode.

Mode	Playbadk
Signal	Hi-Fi alignment tape (Hi-Fi 400Hz), alignment tape (JVC-MH-1)
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check. (Check with the CHA head)
Adjustment locations	X-value adjuster screw

[Adjustment method]

- **Adjustment by Hi-Fi alignment tape**

  When the tracking is set at the center position (by pressing the ▽ and △ keys simultaneously), adjust the RF output to maximum.

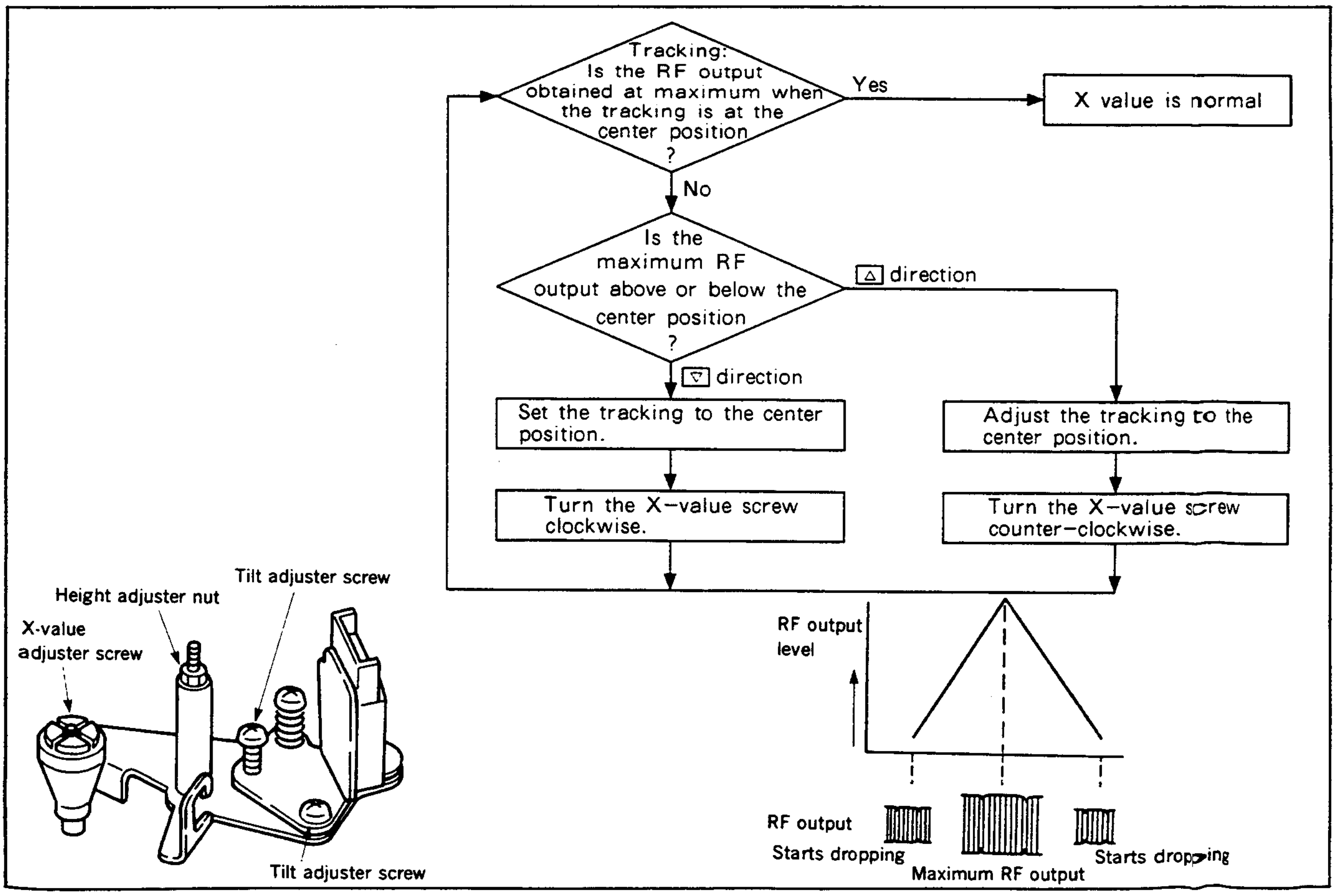

Tracking: Is the RF output obtained at maximum when the tracking is at the center position ?
Yes
X value is normal
No
Is the maximum RF output above or below the center position ?
△ direction
▽ direction
Set the tracking to the center position.
Turn the X-value screw clockwise.
Adjust the tracking to the center position.
Turn the X-value screw counter-clockwise.
Tilt adjuster screw
Height adjuster nut
X-value adjuster screw
Tilt adjuster screw
RF output level
RF output
Starts dropping
Maximum RF output
Starts dropping

Fig. 4-8.

- **Adjustment by Alignment tape (JVC-MH-1)**

Adjust the X-value adjuster screw so that maximum RF output is obtained and also that the RF output drops to the same position on pressing the respective ▽ and △ buttons while the tracking is set at the center position.

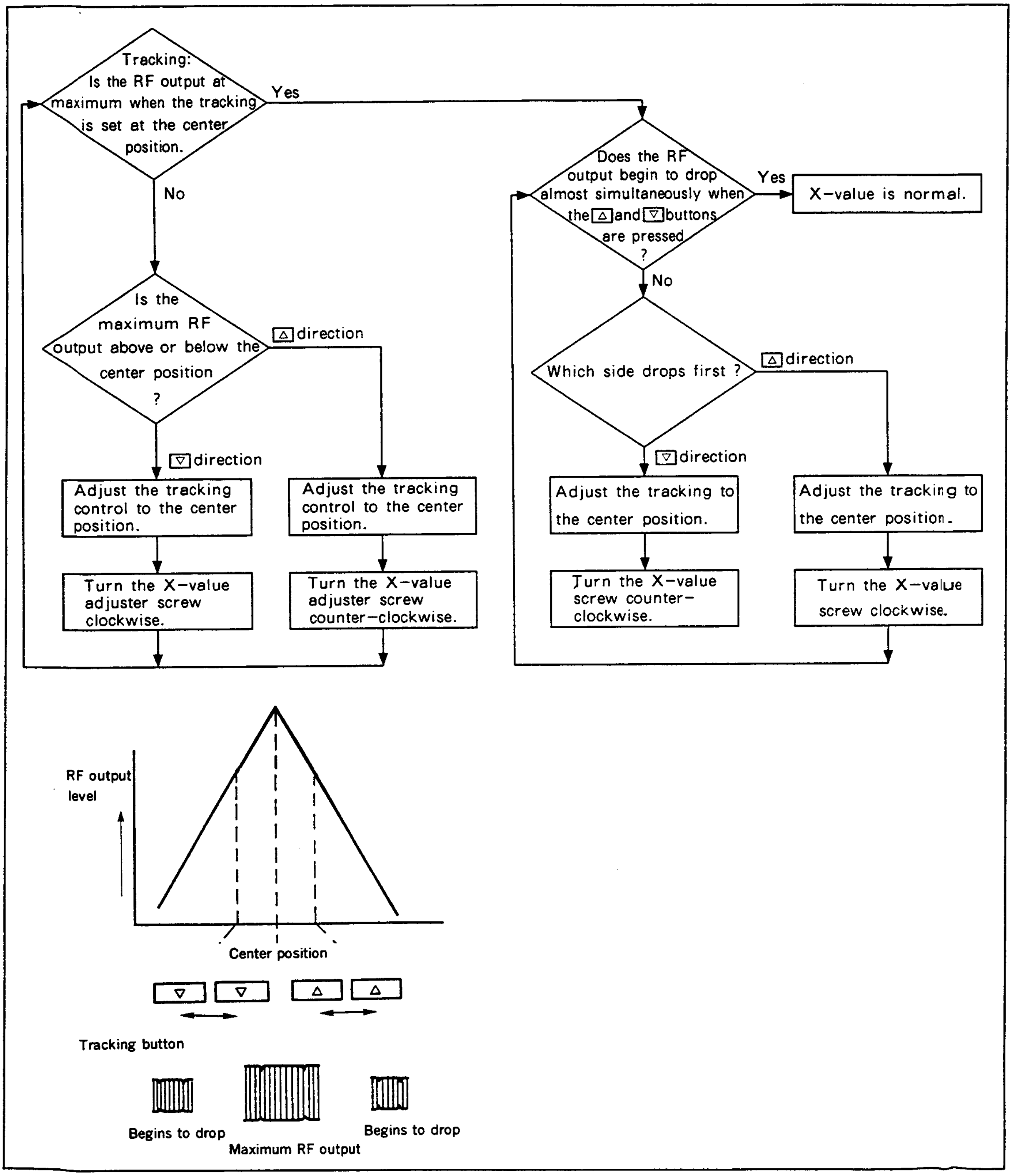

Tracking: Is the RF output at maximum when the tracking is set at the center position.
Yes
No
Is the maximum RF output above or below the center position ?
△ direction
▽ direction
Adjust the tracking control to the center position.
Turn the X-value adjuster screw clockwise.
Adjust the tracking control to the center position.
Turn the X-value adjuster screw counter-clockwise.
Does the RF output begin to drop almost simultaneously when the △ and ▽ buttons are pressed ?
Yes
X-value is normal.
No
Which side drops first ?
△ direction
▽ direction
Adjust the tracking to the center position.
Turn the X-value screw counter-clockwise.
Adjust the tracking to the center position.
Turn the X-value screw clockwise.
RF output level
Center position
▽
▽
△
△
Tracking button
Begins to drop
Maximum RF output
Begins to drop

Fig. 4-9.

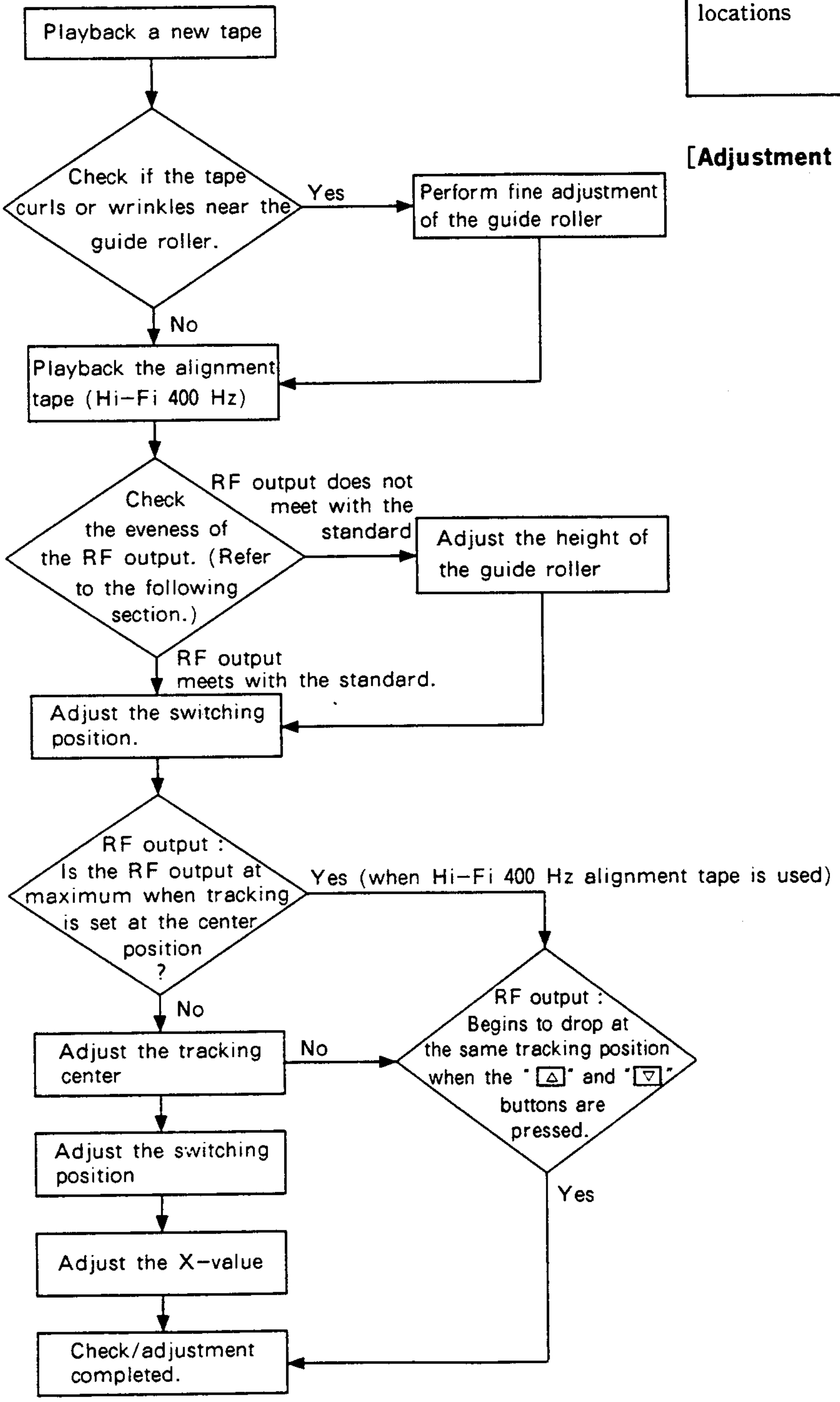
4-1-8. Adjustments after replacing the drum (video head)

Purpose : Co-relative height, X-value and other factors of the drum will deviate from those of the guide roller. If the drum is replaced properly, these deviations are extremely small.

Precaution : Turn off the auto tracking and set the manual tracking mode.

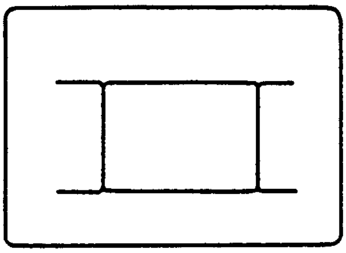
Mode	Playback
Signal	Alignment tape (JVC-MH-1), blank tape
Measuring instrument	Oscilloscope
Measuring point	CH-1 : Connector PB RF pin for RF PC board check. CH-2 : Connector RF SW P pin for RF PC board check.
Adjustment locations	Guide roller (refer to 4-1-5.) Switching position, Tracking preset, SP delay mono-multi, X-value (refer to 4-1-8) } (Refer to the Service Guide)

[Adjustment method]

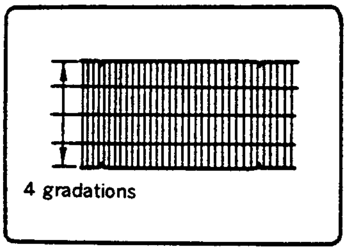

Playback a new tape
Check if the tape curls or wrinkles near the guide roller.
Yes
Perform fine adjustment of the guide roller
No
Playback the alignment tape (Hi-Fi 400 Hz)
Check the eveness of the RF output. (Refer to the following section.)
RF output does not meet with the standard
Adjust the height of the guide roller
RF output meets with the standard.
Adjust the switching position.
RF output : Is the RF output at maximum when tracking is set at the center position ?
Yes (when Hi-Fi 400 Hz alignment tape is used)
No
Adjust the tracking center
No
RF output : Begins to drop at the same tracking position when the "△" and "▽" buttons are pressed.
Yes
Adjust the switching position
Adjust the X-value
Check/adjustment completed.

[Checking the eveness and fluctuation of the RF output]

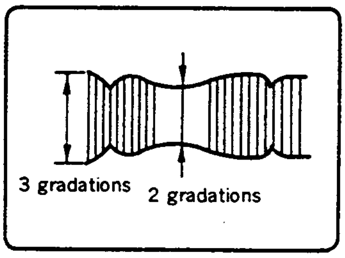
1) Set the RF output to the maximum level using the tracking buttons.



2) Perform fine adjustment of the voltage level range of the oscilloscope, then adjust the RF output deviation to within 4 gradations.



3) Press the tracking buttons and adjust the maximum amplitude of the RF output to within 3 gradations.
4) At this time, check if the minimum amplitude is more than 2 gradations.



5) Check that the RF output fluctuation between minimum and maximum levels is within 13%.

4-1-9. Checking the tension and torque

Purpose: To check that the tension, torque and compression force of the tape take-up section and mobile sections to ensure smooth tape run and achieve standard VTR performance.
If the tape transport is not smooth or problems occur in relation to the tape transport speed, perform the following check.

Mode	Each operation mode without loading a cassette tape. (Refer to section 1-3.)
Measuring instrument	Torque gauge, Torque gauge adapter

Item	VTR operation mode	Reel to be measured	Measurement value
Main brake torque	Stop	Supply and take-up reels	170g·cm or more
Review torque	Review	Supply reel	180±30g·cm (using the torque cassette)
Take-up torque	Playback	Take-up reel	80 to 140g·cm (using torque cassette)
Back tension torque	Rewind	Take-up reel	4 to 25 g·cm

[Check method]

Measure the torque using the torque gauge and torque gauge adaptor with the torque gauge fixed.

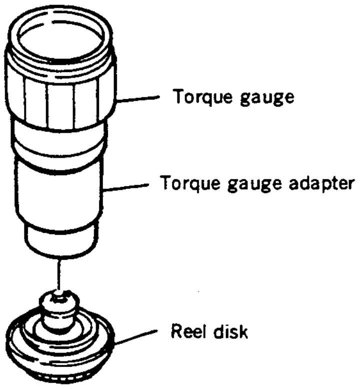


Fig. 4-13.

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